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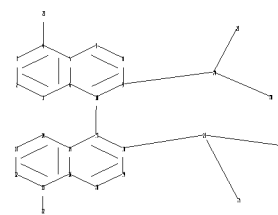
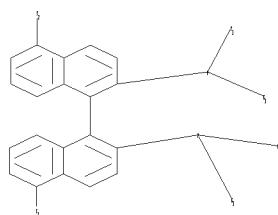
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<http://www.cas.org/support/stngen/stndoc/properties.html>

=>

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chain nodes :

21 22 23 24 25 26 27 28

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

chain bonds :

4-21 9-24 10-17 11-22 18-23 23-25 23-26 24-27 24-28

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-10 7-8 8-9 9-10 11-12 11-16 12-13 13-14
14-15 15-16 15-17 16-20 17-18 18-19 19-20

exact/norm bonds :

4-21 11-22 23-25 23-26 24-27 24-28

exact bonds :

9-24 10-17 18-23

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-10 7-8 8-9 9-10 11-12 11-16 12-13 13-14
14-15 15-16 15-17 16-20 17-18 18-19 19-20

G1: Cy, Ak

G2: Cy, Ak, X, OH, SH, O, S, N, CH₂, COOH, CN, Li, Mg

G3: H, O, Ak

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom
20:Atom 21:CLASS 22:CLASS 23:CLASS 24:CLASS 25:CLASS 26:CLASS 27:CLASS
28:CLASS

L1 STRUCTURE UPLOADED

=> D L1

L1 HAS NO ANSWERS

L1 STR

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

Structure attributes must be viewed using STN Express query preparation.

=> S L1 FULL

FULL SEARCH INITIATED 19:58:59 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 894 TO ITERATE

100.0% PROCESSED 894 ITERATIONS

90 ANSWERS

SEARCH TIME: 00.00.01

L2 90 SEA SSS FUL L1

=> FILE CAPLUS

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

192.03

192.25

FILE 'CAPLUS' ENTERED AT 19:59:11 ON 15 JAN 2010

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FILE COVERS 1907 - 15 Jan 2010 VOL 152 ISS 4

FILE LAST UPDATED: 14 Jan 2010 (20100114/ED)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Oct 2009

USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Oct 2009

Caplus now includes complete International Patent Classification (IPC) reclassification data for the third quarter of 2009.

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> S L2

L3 35 L2

=> D L3 IBIB ABS HITSTR 1-35

L3 ANSWER 1 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2009:1278768 CAPLUS

DOCUMENT NUMBER: 152:75202

TITLE: Chirally functionalized mesoporous organosilicas with built-in BINAP ligand for asymmetric catalysis

AUTHOR(S): Wang, Peiyuan; Liu, Xiao; Yang, Jie; Yang, Yan; Zhang, Lei; Yang, Qihua; Li, Can

CORPORATE SOURCE: State Key Laboratory of Catalysis, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian, 116023, Peop. Rep. China

SOURCE: Journal of Materials Chemistry (2009), 19(42), 8009-8014

CODEN: JMACEP; ISSN: 0959-9428

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The chirally functionalized periodic mesoporous organosilica (PMO) with C2-sym. chiral building blocks, BINAP (2,2'-bis(diphenylphosphino)-1,1'-binaphthyl), in the pore wall was successfully synthesized for the 1st time using a successive co-condensation and post-synthesis modification method. Chiral BINAPO (2,2'-bis(diphenylphosphino)oxide)-1,1'-binaphthyl bridging mesoporous organosilica with highly ordered 2-dimensional hexagonal structure was 1st synthesized by co-condensation of (R)-5,5'-bis(3-triethoxysilylpropyl-1-ureyl)-2,2'-bis(diphenylphosphino)oxide)-1,1'-binaphthyl with tetramethoxysilane in the presence of block copolymer P123 as template under weakly acidic conditions. The BINAPO in the pore wall of PMO was reduced with trichlorosilane to generate BINAP using a post-synthesis modification method. The chiral PMO with built-in BINAP (coordination with [RuCl₂(benzene)]₂) is an efficient solid catalyst for the asym. hydrogenation of β -keto esters with ee \leq 99%, which is among the highest ever reported for the chirally functionalized PMOs in asym. catalysis.

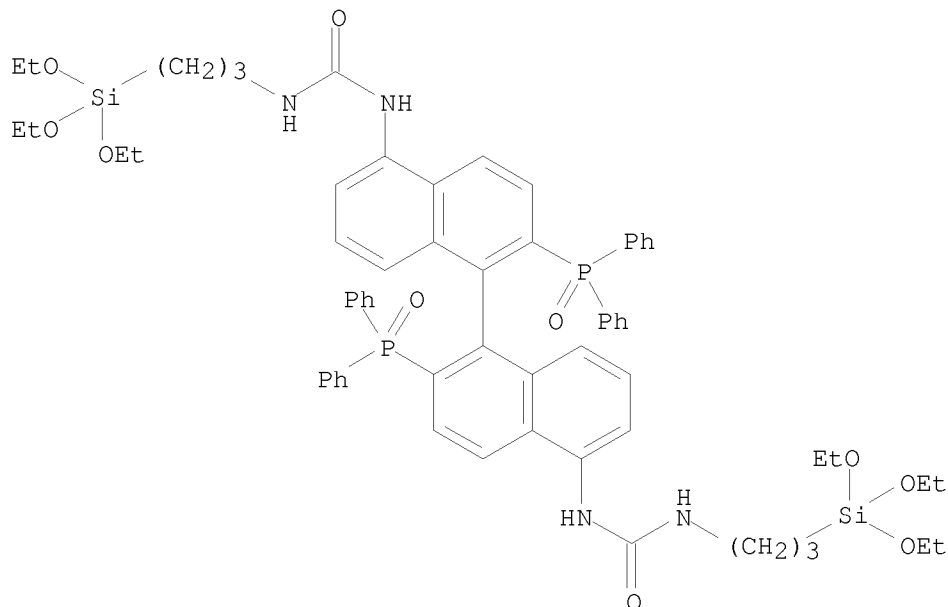
IT 1108208-93-0

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation and catalytic activity of chirally functionalized periodic mesoporous organosilica with built-in BINAP coordinated Ru chloride for asym. hydrogenation of keto esters)

RN 1108208-93-0 CAPLUS

CN Urea, N,N'''-[(1R)-2,2'-bis(diphenylphosphinyl)[1,1'-binaphthalene]-5,5'-diyl]bis[N''-[3-(triethoxysilyl)propyl]- (CA INDEX NAME)



REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2008:1128372 CAPLUS

DOCUMENT NUMBER: 149:379202

TITLE: Organosilane compound and organosilica obtained from organosilane

INVENTOR(S): Mizoshita, Norihiro; Goto, Yasutomo; Inagaki, Shinji; Shimada, Toyoshi

PATENT ASSIGNEE(S): Kabushiki Kaisha Toyota Chuo Kenkyusho, Japan; Toyoshi Shimada

SOURCE: U.S. Pat. Appl. Publ., 46pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20080227939	A1	20080918	US 2008-73339	20080304
JP 2008247886	A	20081016	JP 2008-4876	20080111
PRIORITY APPLN. INFO.:			JP 2007-57353	A 20070307
			JP 2008-4876	A 20080111

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 149:379202

AB An organosilane compound is expressed by any one of the following allyl group-containing (aryl)silanes (1) to (7) H₃-mN(ArSi(OR₁)_n(Q)_{3-n})_m, XC.tplbond.CArSi(OR₁)_n(Q)_{3-n}, XCR₈:CR₇LArSi(OR₁)_n(Q)_{3-n}, YCOArSi(OR₁)_n(Q)_{3-n}, HOArSi(OR₁)_n(Q)_{3-n}, XCR₈:CR₇Si(OR₁)_n(Q)_{3-n}, and XC.tplbond.CSi(OR₁)_n(Q)_{3-n} (where Ar = phenylene group or the like; R₁ = H atom or the like; R₂-8 = Me or the like; n = 0-2; m = 1 or 2; L = single

bond or the like; X = H atom or the like; Q = CR₂R₃CR₄:CR₅R₆; and Y = H atom or the like) and used to produce a functional organosilica film. Thus, 9,10-bis(4-diallylethoxysilylphenylethynyl)anthracene [prepared by coupling 1.396 mmol 4-(diallylethoxysilyl)iodobenzene with 0.6343 mmol 9,10-diethynylantracene] was exposed to aqueous HCl and heated at 100° for 19 h, spin cast onto quartz, and dried at 25° for 24 h to give organosilica thin film.

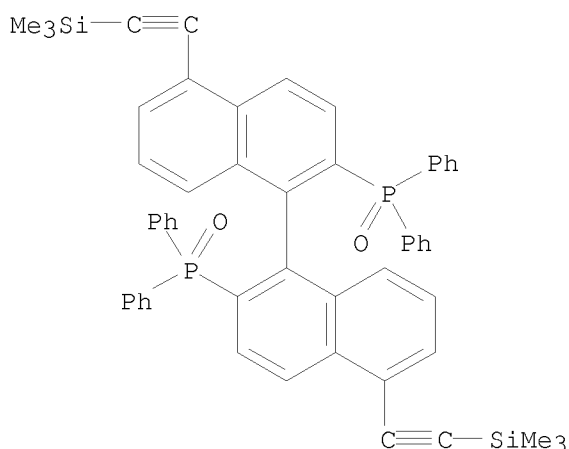
IT 959611-94-0

RL: RCT (Reactant); RACT (Reactant or reagent)

(allyl group-containing organosilane compound for organosilica thin films)

RN 959611-94-0 CAPLUS

CN Phosphine oxide, 1,1'-[(1S)-5,5'-bis[2-(trimethylsilyl)ethynyl][1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



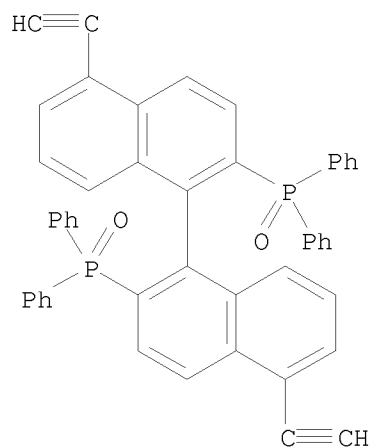
IT 959611-95-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(allyl group-containing organosilane compound for organosilica thin films)

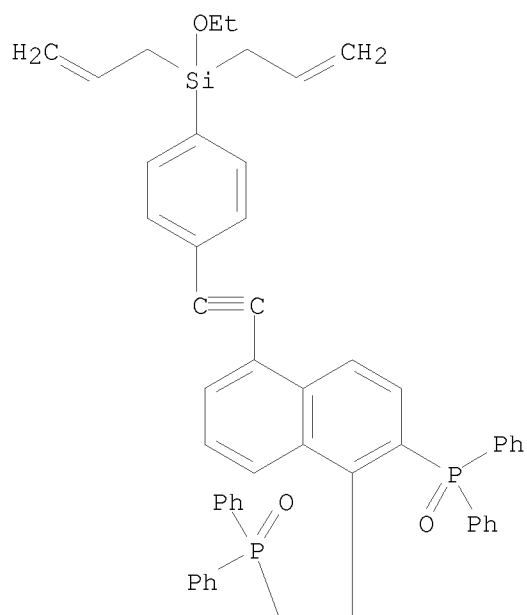
RN 959611-95-1 CAPLUS

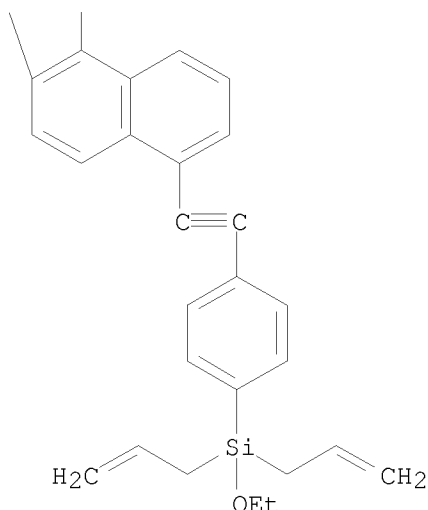
CN Phosphine oxide, 1,1'-[(1S)-5,5'-diethynyl[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



IT 959611-96-2P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (allyl group-containing organosilane compound for organosilica thin films)
 RN 959611-96-2 CAPLUS
 CN Phosphine oxide, 1,1'-[(1S)-5,5'-bis[2-[4-(ethoxydi-2-propen-1-ylsilyl)phenyl]ethynyl][1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl-
 (CA INDEX NAME)

PAGE 1-A





L3 ANSWER 3 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2008:541187 CAPLUS

DOCUMENT NUMBER: 149:331813

TITLE: Extensive re-investigations of pressure effects in rhodium-catalyzed asymmetric hydrogenations

AUTHOR(S): Alame, Mohamad; Pestre, Nathalie; de Bellefon, Claude

CORPORATE SOURCE: Laboratoire de Genie des Procédés Catalytiques, CNRS-CPE Lyon, Villeurbanne, 69616, Fr.

SOURCE: Advanced Synthesis & Catalysis (2008), 350(6), 898-908
CODEN: ASCAF7; ISSN: 1615-4150

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The catalytic hydrogenation of three prochiral substrates Me Z- α -acetamidocinnamate (MAC), Me 2-acetamidoacrylate (M-Acrylate) and Et 4-methyl-3-acetamido-2-propanoate (E-EMAP) with rhodium precursors complexed with chiral diphosphines is reported at 1-30 bar hydrogen pressure. A library of 56 chiral diphosphines, including 23 BINAP derivs., 7 JOSIPHOS, 5 BIPHEP, 3 DUPHOS derivs., and 18 other ligands, was used. While it was generally accepted that high hydrogen pressure would result in lower ees, it is now demonstrated on a statistical basis that an equivalent distribution between beneficial and detrimental pressure effects on ee prevails and that the hydrogen pressure effect on enantioselectivity is not an isolated phenomenon since more than 33% of the reaction systems studied are strongly affected. In some case, the enantioselectivity can be improved up to 97% just by applying a higher hydrogen pressure. Extension of these conclusions to other non-chiral reagents is proposed.

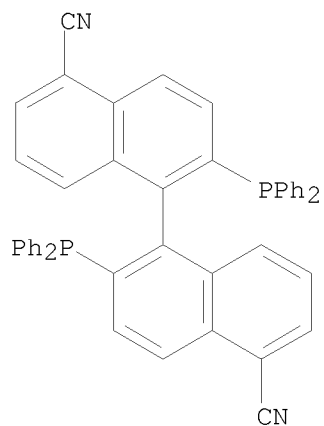
IT 681244-45-1 681244-51-9 930794-21-1
1015011-80-9 1015011-84-3 1052274-04-0

RL: CAT (Catalyst use); USES (Uses)

(ligand; extensive re-investigations of pressure effects in rhodium-catalyzed asym. hydrogenations)

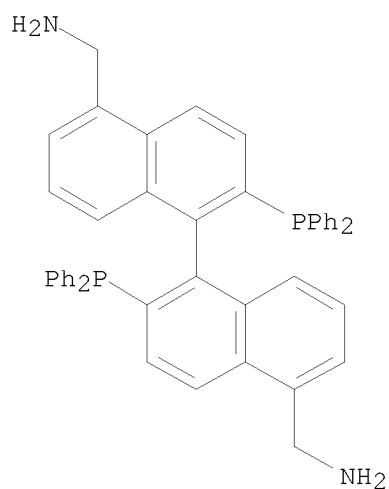
RN 681244-45-1 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-, (1R)- (CA INDEX NAME)



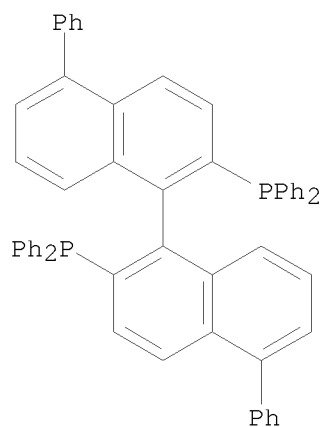
RN 681244-51-9 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-,
(1R)- (CA INDEX NAME)



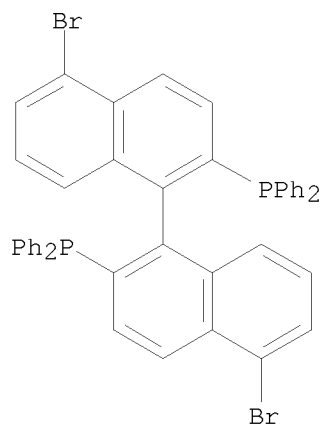
RN 930794-21-1 CAPLUS

CN Phosphine, 1,1'-[(1R)-5,5'-diphenyl[1,1'-binaphthalene]-2,2'-diyl]bis[1,1'-
diphenyl- (CA INDEX NAME)



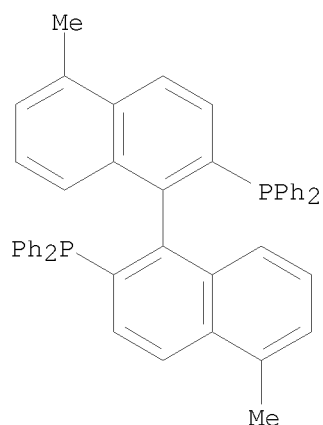
RN 1015011-80-9 CAPLUS

CN Phosphine, 1,1'-[(1R)-5,5'-dibromo[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



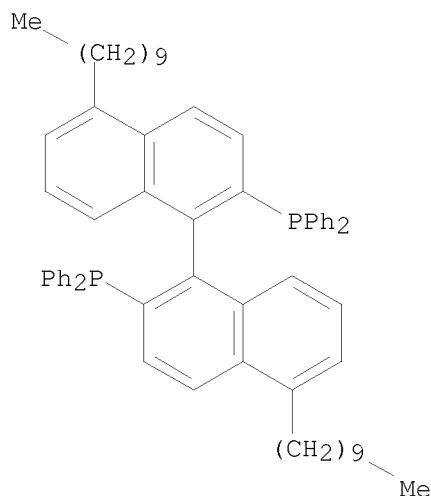
RN 1015011-84-3 CAPLUS

CN Phosphine, 1,1'-[(1R)-5,5'-dimethyl[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



RN 1052274-04-0 CAPLUS

CN Phosphine, 1,1'-[(1R)-5,5'-didecyl[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)

REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2008:383298 CAPLUS

DOCUMENT NUMBER: 150:191094

TITLE: BINAP-Ru and -Rh catalysts covalently immobilized on silica and their repeated application in asymmetric hydrogenation

AUTHOR(S): McDonald, Aidan R.; Mueller, Christian; Vogt, Dieter; van Klink, Gerard P. M.; van Koten, Gerard

CORPORATE SOURCE: Organic Chemistry and Catalysis, Faculty of Science, Utrecht University, Utrecht, 3584 CH, Neth.

SOURCE: Green Chemistry (2008), 10(4), 424-432
CODEN: GRCHFJ; ISSN: 1463-9262
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 150:191094

AB The facile immobilization of a chiral diphosphine ligand, BINAP, on a silica (high pore volume, low surface area) is presented. The protected ligand has been immobilized as a phosphine oxide and deprotected on the surface to prevent side reactions of unprotected phosphines with surface silanol groups. The resulting diphosphine ligand on silica was converted to both rhodium and ruthenium complexes. The novel materials were characterized using solid-state IR-DRIFT and ^{29}Si and ^{31}P CP-MAS NMR techniques as well as elemental content measurements. Ruthenium and rhodium catalyzed asym. hydrogenation of various enamides, β -keto esters and aromatic ketones is presented using immobilized BINAP ligands. The repeated use of the immobilized catalyst in five recycles demonstrates homogeneous catalysis with heterogeneous catalysts, thus reducing solvent waste, and loss of precious metal and or ligand.

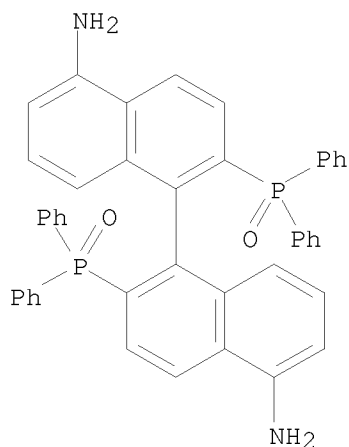
IT 114317-09-8

RL: RCT (Reactant); RACT (Reactant or reagent)

(BINAP-Ru and -Rh catalysts covalently immobilized on silica and their repeated application in asym. hydrogenation)

RN 114317-09-8 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphinyl)- (CA INDEX NAME)



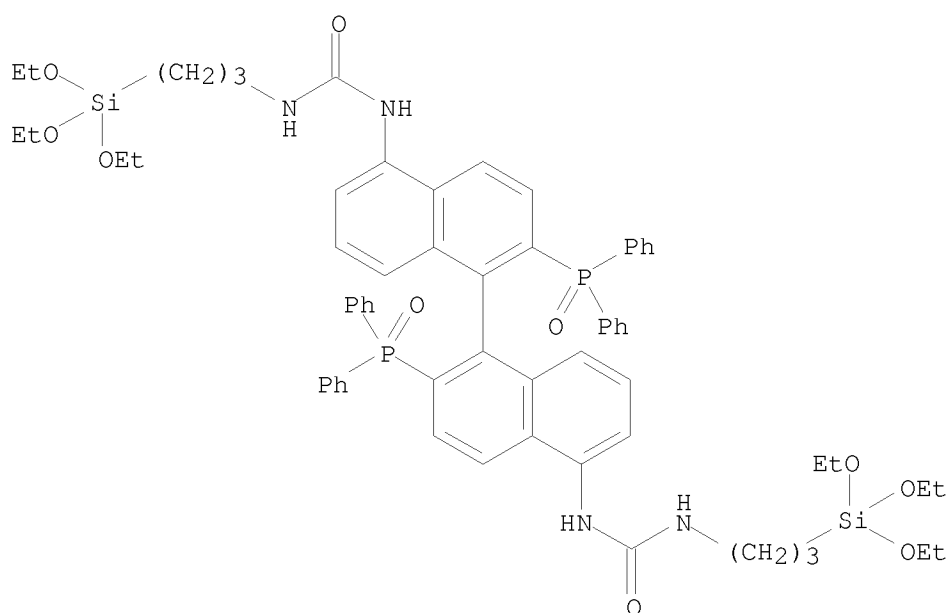
IT 1108208-93-0DP, silica-supported 1108208-94-1DP, silica-supported

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(BINAP-Ru and -Rh catalysts covalently immobilized on silica and their repeated application in asym. hydrogenation)

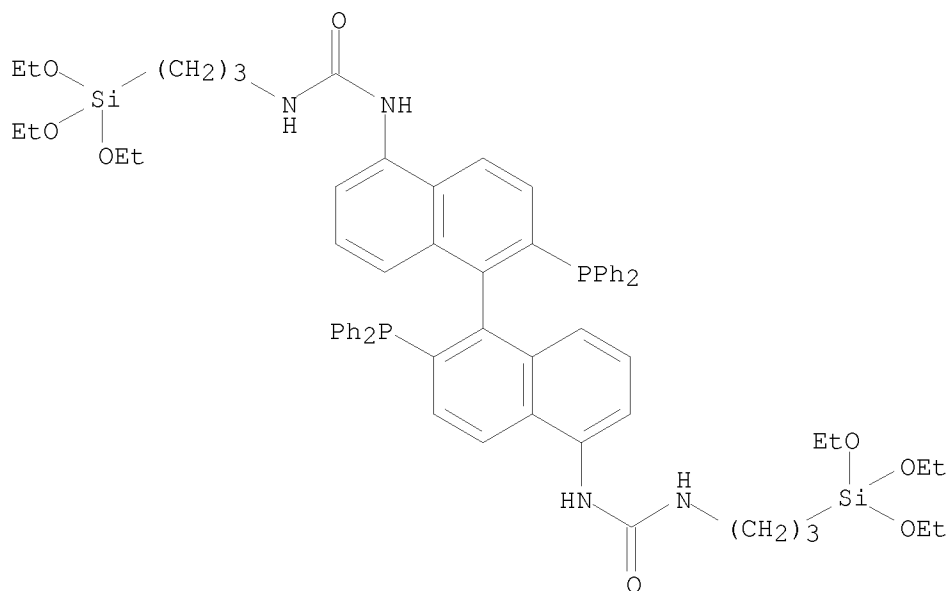
RN 1108208-93-0 CAPLUS

CN Urea, N,N'''-[(1R)-2,2'-bis(diphenylphosphinyl)[1,1'-binaphthalene]-5,5'-diyl]bis[N''-[3-(triethoxysilyl)propyl]- (CA INDEX NAME)



RN 1108208-94-1 CAPLUS

CN Urea, N,N'''-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[N''-[3-(triethoxysilyl)propyl]- (CA INDEX NAME)



OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)
 REFERENCE COUNT: 83 THERE ARE 83 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 5 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2008:191778 CAPLUS
DOCUMENT NUMBER: 148:240545
TITLE: Easily recoverable polymers having
bis(diphenylphosphino)binaphthyl group useful as
addition reaction or reduction catalysts
INVENTOR(S): Shimada, Toyoshi; Takenaka, Naomi; Goshima, Gakuto;
Hosoi, Hiroyuki
PATENT ASSIGNEE(S): Kyoeisha Chemical Co., Ltd., Japan
SOURCE: PCT Int. Appl., 40pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2008018195	A1	20080214	WO 2007-JP54845	20070312
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RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
JP 4160111	B2	20081001	JP 2008-523612	20070312
EP 2050776	A1	20090422	EP 2007-738317	20070312
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CN 101501099	A	20090805	CN 2007-80029452	20090209
IN 2009DN01105	A	20090515	IN 2009-DN1105	20090216
PRIORITY APPLN. INFO.:			JP 2006-217013	A 20060809
			WO 2007-JP54845	W 20070312

AB Title polymers with mol. weight 1,500-10,000 used as catalysts for asym. 1,4-addition reaction or asym. reduction reaction are prepared from racemic or optically active 2,2'-bis(diphenylphosphino)-1,1'-binaphthyl compound having its 5-position substituted with the unsatd. end of one (meth)acryloyl of a compound having multiple (meth)acryloyls and another 2,2'-bis(diphenylphosphino)-1,1'-binaphthyl compound having its 5'-position substituted with the unsatd. end of another (meth)acryloyl of the compound having multiple (meth)acryloyls and the reduction catalysts comprise the polymers and transition metals. Thus, 1 mol 1,1'-[1,1'-binaphthalene]-2,2'-diylbis[1,1-diphenyl-phosphine] was oxidized with 20 mol 35% hydrogen peroxide, the resulting 1,1'-[1,1'-binaphthalene]-2,2'-diylbis[1,1-diphenyl-phosphine oxide] was reacted with bis(pyridine)iodonium tetrafluoroborate in trifluorosulfonic acid to give 1,1'-[(1R)-5,5'-diiodo[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl-phosphine oxide], 0.225 mmol of which was polymerized with 0.458 mmol Light Acrylate NP-A in the presence of 2.9 mg palladium acetate and 13.9 mg triphenylphosphine in 20 mL DMF at 130° for 48 h, reduced at 140° for 48 h in 30 mL xylene containing 2.2 mL trichlorosilane and 0.7

mL triethylamine to give a copolymer with Mw 4889, 50 mg of which was heated with 1,3-cyclohexenone 0.312, bis(η^2 -ethene)(2,4-pentanedionato- $\kappa O, \kappa O'$)-rhodium 0.02, and phenylboronic acid 2.0 mmol at 100° for 13 h to give (R)-3-phenylcyclohexanone with purity 80% initially and 63% when recycled copolymer was used.

IT 1006052-68-1DP, reduced, complex with rhodium

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(catalyst; easily recoverable polymers having bis(diphenylphosphino)binaphthyl group useful as addition reaction or reduction catalysts)

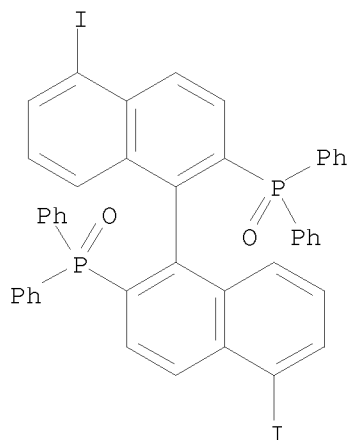
RN 1006052-68-1 CAPLUS

CN 2-Propenoic acid, 1,1'-(2,2-dimethyl-1,3-propanediyl) ester, polymer with 1,1'-[(1R)-5,5'-diiodo[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenylphosphine oxide] (CA INDEX NAME)

CM 1

CRN 871350-54-8

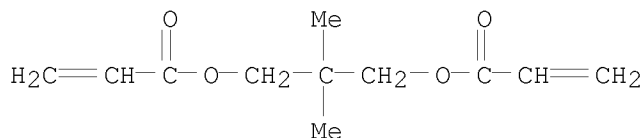
CMF C44 H30 I2 O2 P2



CM 2

CRN 2223-82-7

CMF C11 H16 O4



IT 1005774-18-4DP, reduced, complex with rhodium

1005774-20-8DP, reduced 1006052-68-1P

1006052-76-1DP, reduced 1006052-79-4DP, reduced

1006052-82-9DP, reduced 1006052-85-2DP, reduced

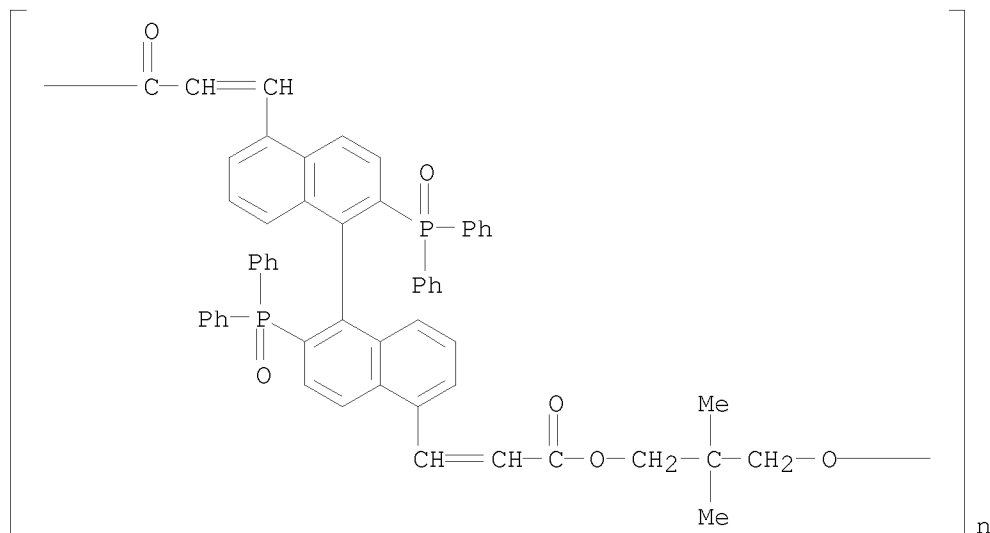
1006052-88-5P 1006052-89-6P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(easily recoverable polymers having bis(diphenylphosphino)binaphthyl group useful as addition reaction or reduction catalysts)

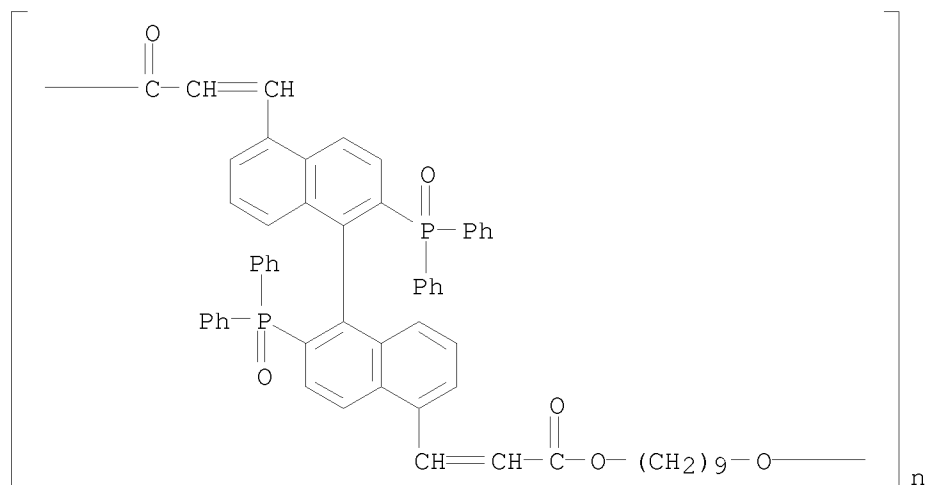
RN 1005774-18-4 CAPLUS

CN Poly[oxy(2,2-dimethyl-1,3-propanediyl)oxy(1-oxo-2-propene-1,3-diyl)[(1R)-2,2'-bis(diphenylphosphinyl)[1,1'-binaphthalene]-5,5'-diyl](3-oxo-1-propene-1,3-diyl)] (CA INDEX NAME)



RN 1005774-20-8 CAPLUS

CN Poly[oxy-1,9-nonanediyl]oxy(1-oxo-2-propene-1,3-diyl)[(1R)-2,2'-bis(diphenylphosphinyl)[1,1'-binaphthalene]-5,5'-diyl](3-oxo-1-propene-1,3-diyl)] (CA INDEX NAME)



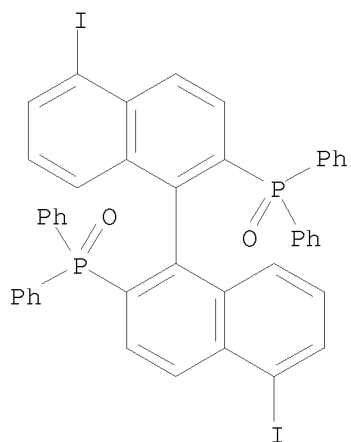
RN 1006052-68-1 CAPLUS

CN 2-Propenoic acid, 1,1'-(2,2-dimethyl-1,3-propanediyl) ester, polymer with 1,1'-[(1R)-5,5'-diiodo[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenylphosphine oxide] (CA INDEX NAME)

CM 1

CRN 871350-54-8

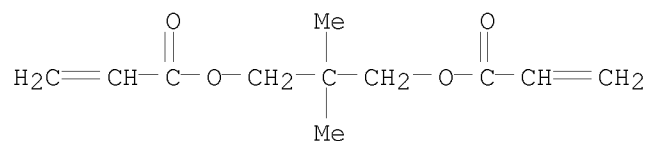
CMF C44 H30 I2 O2 P2



CM 2

CRN 2223-82-7

CMF C11 H16 O4



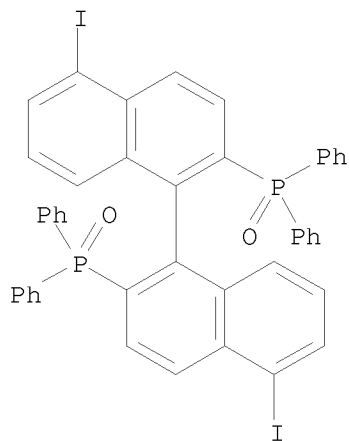
RN 1006052-76-1 CAPLUS

CN 2-Propenoic acid, 1,1'-[(octahydro-4,7-methano-1H-indene-5,?-diyl)bis(methylene)] ester, polymer with
1,1'-[(1R)-5,5'-diiodo[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenylphosphine oxide] (CA INDEX NAME)

CM 1

CRN 871350-54-8

CMF C44 H30 I2 O2 P2

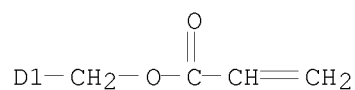
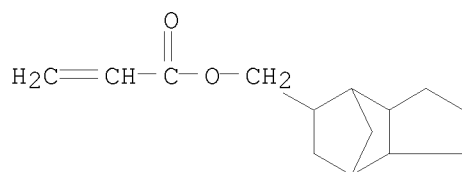


CM 2

CRN 42594-17-2

CMF C18 H24 O4

CCI IDS

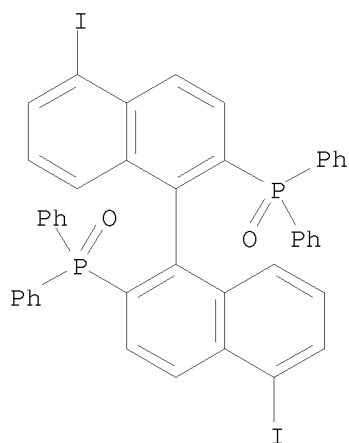


RN 1006052-79-4 CAPLUS
 CN 2-Propenoic acid, 1,1'-(1,9-nonanediyl) ester, polymer with
 1,1'-[(1R)-5,5'-diiodo[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-
 diphenylphosphine oxide] (CA INDEX NAME)

CM 1

CRN 871350-54-8

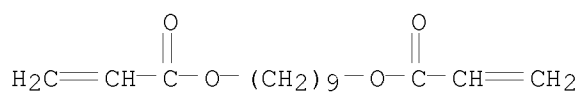
CMF C44 H30 I2 O2 P2



CM 2

CRN 107481-28-7

CMF C15 H24 O4



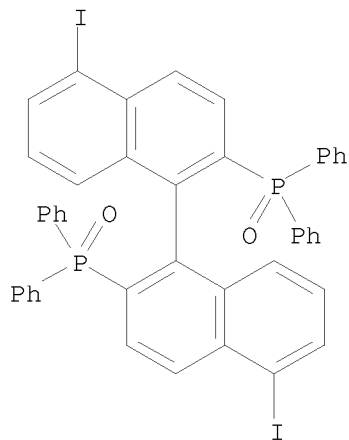
RN 1006052-82-9 CAPLUS

CN Phosphine oxide, 1,1'-[(1R)-5,5'-diiodo[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl-, polymer with
 α, α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -[(1-oxo-2-propen-1-yl)oxy]poly(oxy-1,2-ethanediyl)] (CA INDEX NAME)

CM 1

CRN 871350-54-8

CMF C44 H30 I2 O2 P2



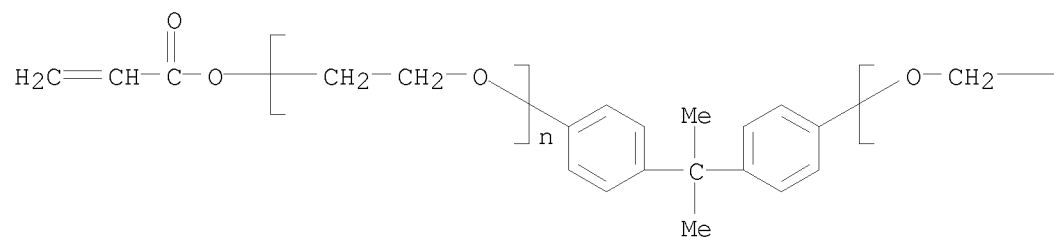
CM 2

CRN 64401-02-1

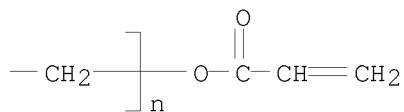
CMF (C2 H4 O)_n (C2 H4 O)_n C21 H20 O4

CCI PMS

PAGE 1-A



PAGE 1-B



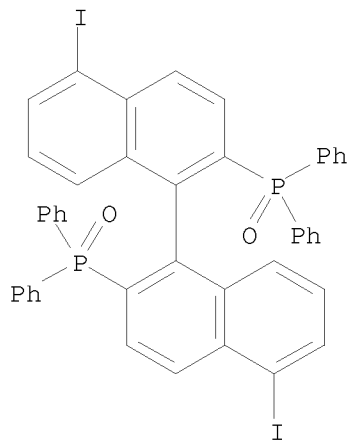
RN 1006052-85-2 CAPLUS

CN 2-Propenoic acid, 1,1'-[2,2-bis[[(1-oxo-2-propen-1-yl)oxy)methyl]-1,3-propanediyl] ester, polymer with 1,1'-[(1R)-5,5'-diiodo[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenylphosphine oxide] (CA INDEX NAME)

CM 1

CRN 871350-54-8

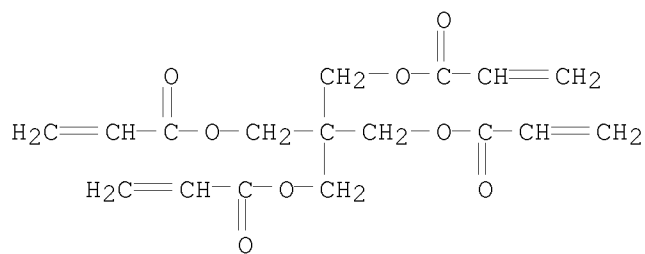
CMF C44 H30 I2 O2 P2



CM 2

CRN 4986-89-4

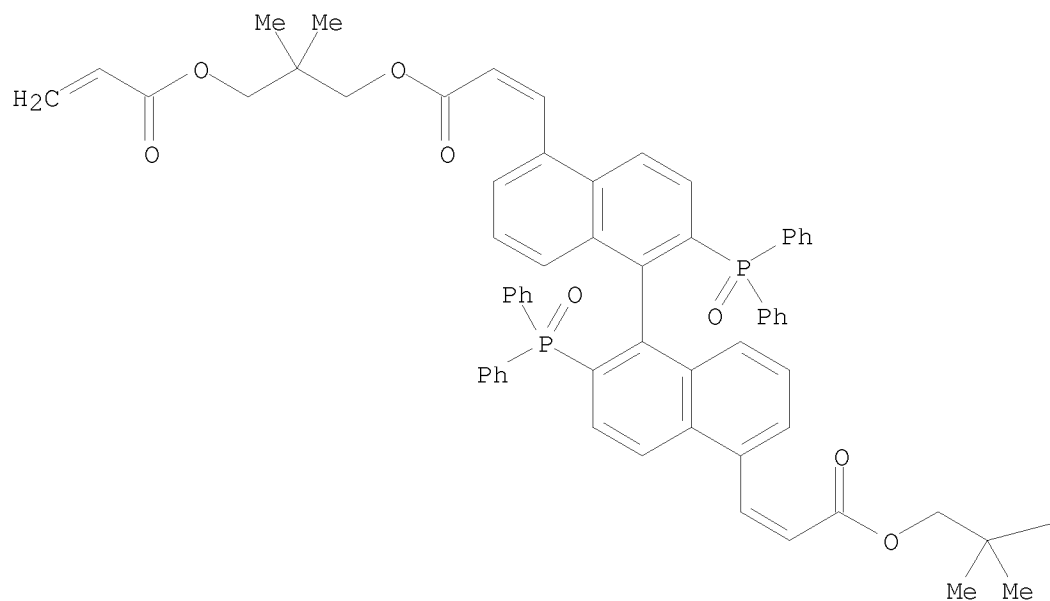
CMF C17 H20 O8



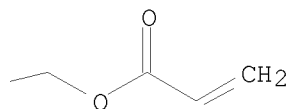
RN 1006052-88-5 CAPLUS

CN 2-Propenoic acid, 3,3'-[(1R)-2,2'-bis(diphenylphosphinyl)[1,1'-binaphthalene]-5,5'-diyl]bis-, 1,1'-bis[2,2-dimethyl-3-[(1-oxo-2-propen-1-yl)oxy]propyl] ester (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



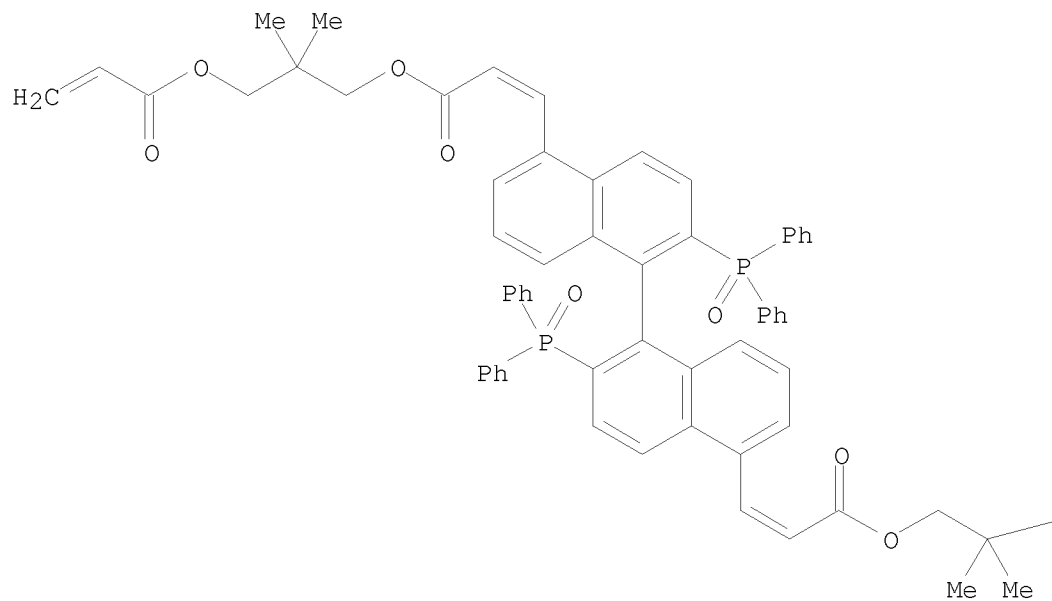
RN 1006052-89-6 CAPLUS

CN 2-Propenoic acid, 3,3'-[(1R)-2,2'-bis(diphenylphosphinyl)[1,1'-binaphthalene]-5,5'-diyl]bis-, 1,1'-bis[2,2-dimethyl-3-[(1-oxo-2-propen-1-yl)oxy]propyl] ester, homopolymer (CA INDEX NAME)

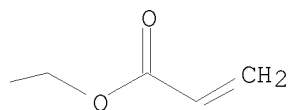
CM 1

CRN 1006052-88-5
CMF C66 H60 O10 P2

PAGE 1-A



PAGE 1-B

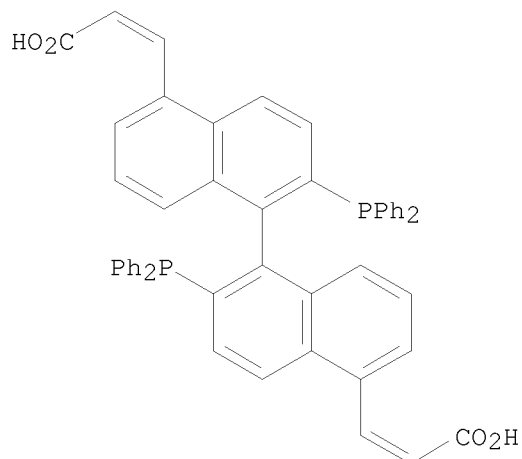


IT 1006052-74-9P
RL: IMF (Industrial manufacture); MSC (Miscellaneous); PREP (Preparation)

(model compound for backbone; easily recoverable polymers having bis(diphenylphosphino)binaphthyl group useful as addition reaction or reduction catalysts)

RN 1006052-74-9 CAPLUS

CN 2-Propenoic acid, 3,3'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis- (CA INDEX NAME)



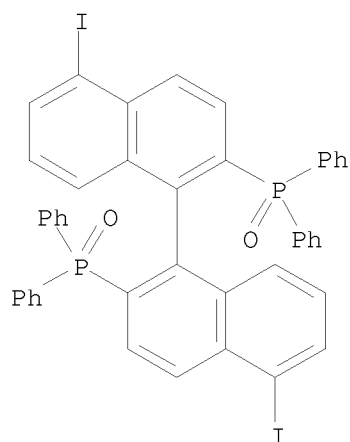
IT 871350-54-8P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(monomer; easily recoverable polymers having bis(diphenylphosphino)binaphthyl group useful as addition reaction or reduction catalysts)

RN 871350-54-8 CAPLUS

CN Phosphine oxide, 1,1'-[(1R)-5,5'-diiodo[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



REFERENCE COUNT:

8

THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 6 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2007:1136646 CAPLUS

DOCUMENT NUMBER: 148:34059

TITLE: Preparation of functionalized aryl(diallyl)ethoxysilanes and their palladium-catalyzed coupling reactions giving sol-gel precursors

AUTHOR(S): Maegawa, Yoshifumi; Nagano, Toyohiro; Yabuno, Tatsuya; Nakagawa, Hiroki; Shimada, Toyoshi

CORPORATE SOURCE: Department of Chemical Engineering, Nara National College of Technology, 22 Yata-cho, Yamatokoriyama, Nara, 639-1080, Japan

SOURCE: Tetrahedron (2007), 63(46), 11467-11474

CODEN: TETRAB; ISSN: 0040-4020

PUBLISHER: Elsevier Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 148:34059

AB A series of mol. building blocks containing allylsilyl groups, which can be incorporated into the appropriate sol-gel precursors as fragments, were prepared. The allylsilyl group is retained unchanged over the course of all reactions giving sol-gel precursors and behave as the synthetic equivalent of alkoxysilyl groups toward sol-gel polymerization, but are stable enough to allow

purification by silica gel chromatog. These allylsilanes were successfully used as building blocks to construct functional sol-gel precursors via palladium-catalyzed coupling reactions.

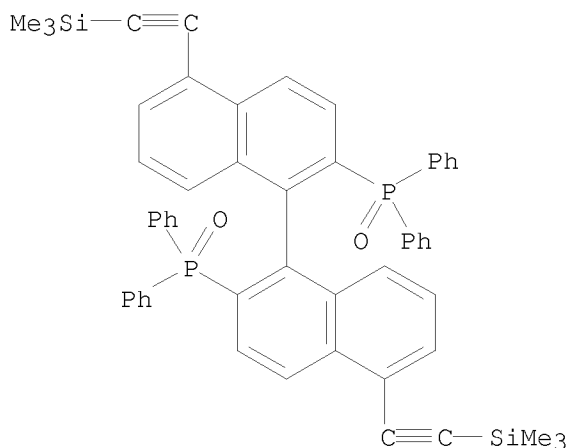
IT 959611-94-0

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of functionalized aryl(diallyl)ethoxysilanes and their palladium-catalyzed coupling reactions giving sol-gel precursors)

RN 959611-94-0 CAPLUS

CN Phosphine oxide, 1,1'-[(1S)-5,5'-bis[2-(trimethylsilyl)ethynyl][1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



IT 959611-95-1P

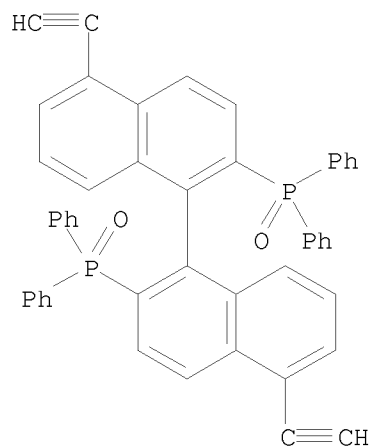
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)

(preparation of functionalized aryl(diallyl)ethoxysilanes and their
palladium-catalyzed coupling reactions giving sol-gel precursors)

RN 959611-95-1 CAPLUS

CN Phosphine oxide, 1,1'-[(1S)-5,5'-diethynyl[1,1'-binaphthalene]-2,2'-
diyl]bis[1,1-diphenyl- (CA INDEX NAME)



IT 959611-96-2P

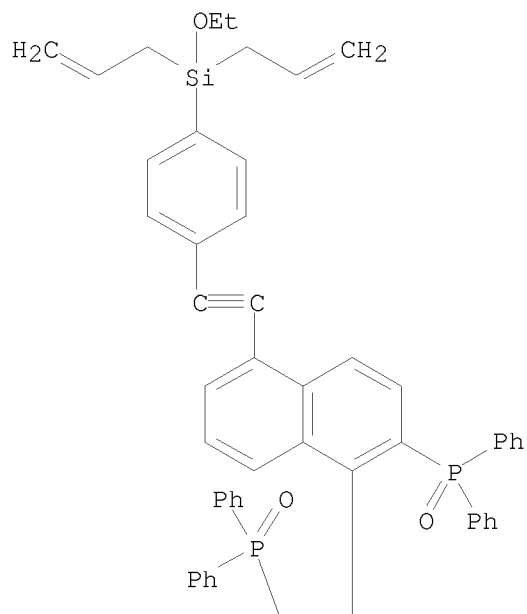
RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of functionalized aryl(diallyl)ethoxysilanes and their
palladium-catalyzed coupling reactions giving sol-gel precursors)

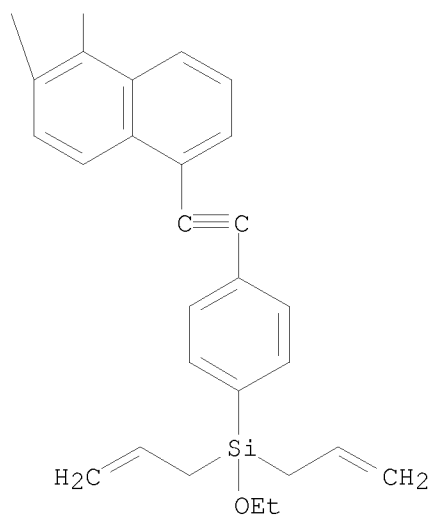
RN 959611-96-2 CAPLUS

CN Phosphine oxide, 1,1'-[(1S)-5,5'-bis[2-[4-(ethoxydi-2-propen-1-
ylsilyl)phenyl]ethynyl][1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl-
(CA INDEX NAME)

PAGE 1-A



PAGE 2-A



REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 7 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2007:382460 CAPLUS

DOCUMENT NUMBER: 148:379908

TITLE: New 5,5'-disubstituted BINAP derivatives: Syntheses and pressure and electronic effects in Rh asymmetric hydrogenation

AUTHOR(S): Alame, M.; Jahjah, M.; Berthod, M.; Lemaire, M.; Meille, V.; de Bellefon, C.

CORPORATE SOURCE: Laboratoire de Genie des Procédés Catalytiques, UMR 2214, CNRS-CPE Lyon, Villeurbanne, 69616, Fr.

SOURCE: Journal of Molecular Catalysis A: Chemical (2007), 268(1-2), 205-212
CODEN: JMCCF2; ISSN: 1381-1169

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

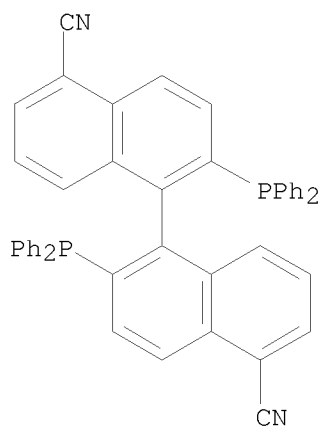
OTHER SOURCE(S): CASREACT 148:379908

AB A library of 5,5'-disubstituted BINAP derivs. were synthesized in good yield from optically pure BINAP and evaluated for the Rh-catalyzed homogeneous asym. hydrogenation of (α)-acylaminoacrylate ester, with ee of up to 77% being obtained with the Ph derivative. The enantiomeric excess variation was followed for the 5,5'-substituents on the BINAP and for a range of pressure from 5 to 30 bar.

IT 681244-45-1 701935-25-3
RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(new 5,5'-disubstituted BINAP derivs. as ligands in the rhodium-catalyzed hydrogenation of unstd. amino acids)

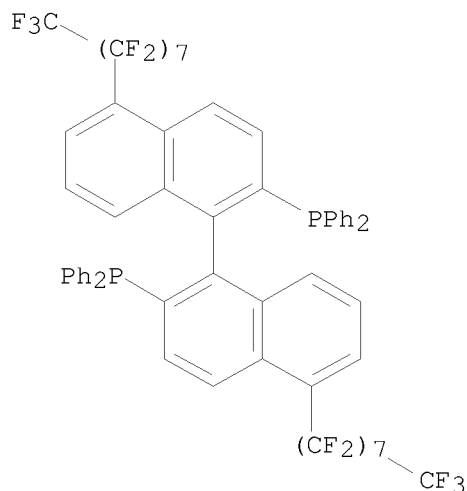
RN 681244-45-1 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-, (1R)- (CA INDEX NAME)

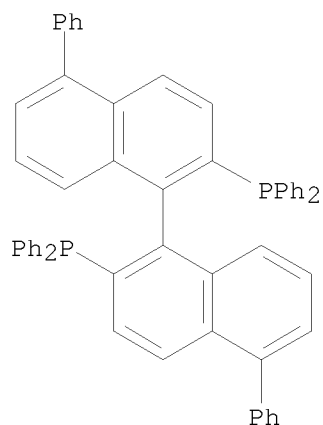


RN 701935-25-3 CAPLUS

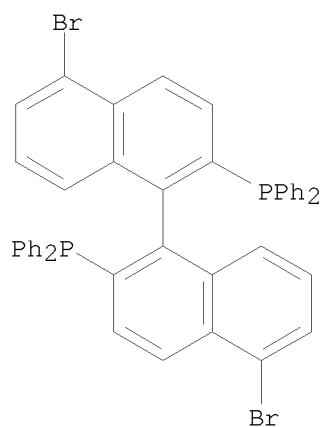
CN Phosphine, 1,1'-[(1R)-5,5'-bis(1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluorooctyl)[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl]- (CA INDEX NAME)



IT 930794-21-1P 1015011-80-9P 1015011-84-3P
 1015011-88-7P
 RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent); USES (Uses)
 (new 5,5'-disubstituted BINAP derivs. as ligands in the
 rhodium-catalyzed hydrogenation of unstd. amino acids)
 RN 930794-21-1 CAPLUS
 CN Phosphine, 1,1'-[(1R)-5,5'-diphenyl[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-
 diphenyl- (CA INDEX NAME)

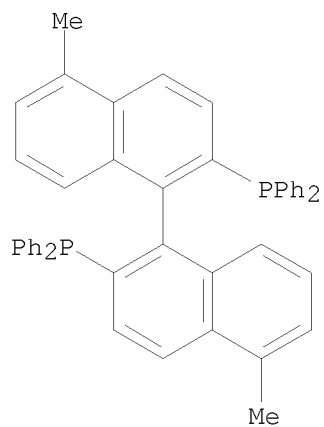


RN 1015011-80-9 CAPLUS
 CN Phosphine, 1,1'-[(1R)-5,5'-dibromo[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-
 diphenyl- (CA INDEX NAME)



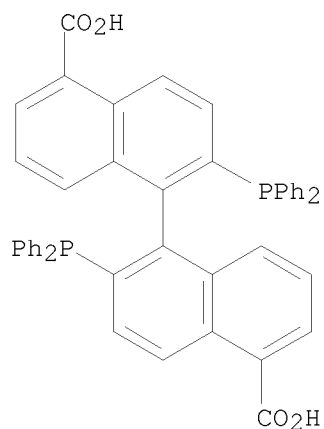
RN 1015011-84-3 CAPLUS

CN Phosphine, 1,1'-[(1R)-5,5'-dimethyl[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)

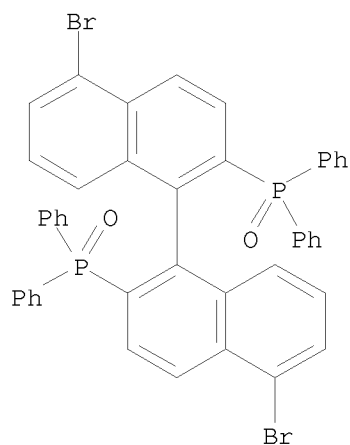


RN 1015011-88-7 CAPLUS

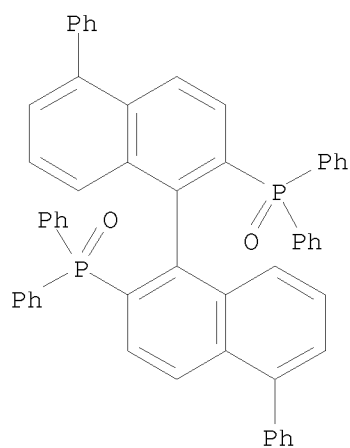
CN [1,1'-Binaphthalene]-5,5'-dicarboxylic acid, 2,2'-bis(diphenylphosphino)-, (1R)- (CA INDEX NAME)



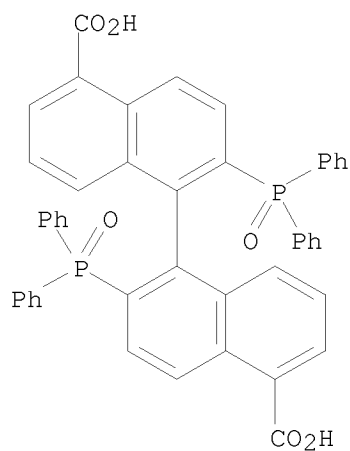
IT 681244-37-1P 930794-20-0P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (new 5,5'-disubstituted BINAP derivs. as ligands in the
 rhodium-catalyzed hydrogenation of unstd. amino acids)
 RN 681244-37-1 CAPLUS
 CN Phosphine oxide, 1,1'-[(1R)-5,5'-dibromo[1,1'-binaphthalene]-2,2'-
 diyl]bis[1,1-diphenyl- (CA INDEX NAME)



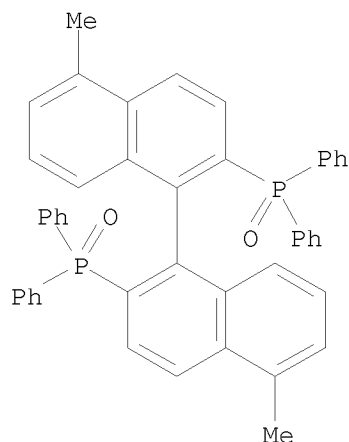
RN 930794-20-0 CAPLUS
 CN Phosphine oxide, 1,1'-[(1R)-5,5'-diphenyl[1,1'-binaphthalene]-2,2'-
 diyl]bis[1,1-diphenyl- (CA INDEX NAME)



IT 1015011-98-9P 1015012-02-8P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (new 5,5'-disubstituted BINAP derivs. as ligands in the
 rhodium-catalyzed hydrogenation of unstd. amino acids)
 RN 1015011-98-9 CAPLUS
 CN [1,1'-Binaphthalene]-5,5'-dicarboxylic acid,
 2,2'-bis(diphenylphosphinyl)-, (1R)- (CA INDEX NAME)



RN 1015012-02-8 CAPLUS
 CN Phosphine oxide, 1,1'-[(1R)-5,5'-dimethyl[1,1'-binaphthalene]-2,2'-
 diyl]bis[1,1-diphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (6 CITINGS)
REFERENCE COUNT: 62 THERE ARE 62 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 8 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2007:352054 CAPLUS

DOCUMENT NUMBER: 146:380115

TITLE: Preparation of binaphthyls as asymmetric ligands

INVENTOR(S): Shimada, Toyoshi; Kakiuchi, Kiyozo

PATENT ASSIGNEE(S): Nara Institute of Science and Technology, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 27pp.

CODEN: JKXXAF

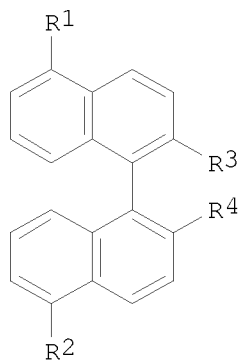
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2007077022	A	20070329	JP 2005-262628	20050909
PRIORITY APPLN. INFO.:			JP 2005-262628	20050909
OTHER SOURCE(S):	MARPAT	146:380115		
GI				



I

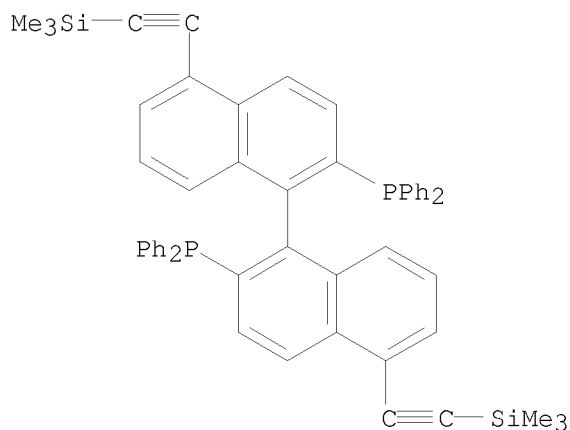
AB Binaphthyls I [R1, R2 = H, (un)substituted alkyl, alkenyl, alkynyl, aryl, silyl; R1 = R2 ≠ H; R3, R4 = POR52, PR52; R5 = (un)substituted Ph] are prepared by oxidation of 2,2'-bis(diphenylphosphino)-1,1'-binaphthyls, iodination of the resulting oxides with bis(pyridine)iodonium tetrafluoroborate (II), followed by cross-coupling of the obtained iodinated binaphthyls with transition metals. Thus, (R)-BINAP dioxide was iodinated with II, cross-coupled with trimethylsilylacetylene in the presence of CuI and PdCl2(PPh3)2, and treated with LiAlH4 to give (R)-I (R1 = R2 = C.tplbond.CSiMe3, R3 = R4 = PPh2) (III). 2-Cyclohexen-1-one was treated with III, PhB(OH)2, and Rh(acac)(C2H4)2 to give 99% optically active 3-phenylcyclohexan-1-one with 97.3% ee.

IT 871350-62-8P

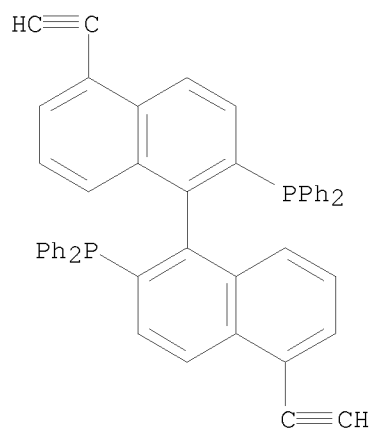
RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of binaphthyls as asym. ligands by cross-coupling of iodobinaphthyls)

RN 871350-62-8 CAPLUS

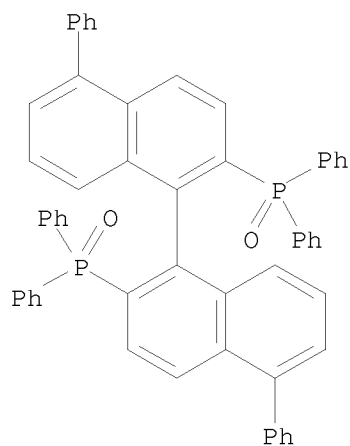
CN Phosphine, 1,1'-[(1R)-5,5'-bis[2-(trimethylsilyl)ethynyl][1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



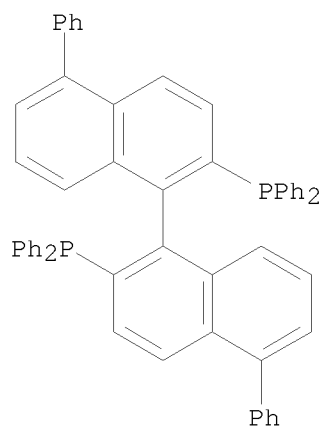
IT 871350-64-0P 930794-20-0P 930794-21-1P
 930794-22-2P 930794-23-3P 930794-24-4P
 930794-25-5P 930794-26-6P
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
 USES (Uses)
 (preparation of binaphthyls as asym. ligands by cross-coupling of
 iodobinaphthyls)
 RN 871350-64-0 CAPLUS
 CN Phosphine, 1,1'-[(1R)-5,5'-diethynyl[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-
 diphenyl- (CA INDEX NAME)



RN 930794-20-0 CAPLUS
 CN Phosphine oxide, 1,1'-[(1R)-5,5'-diphenyl[1,1'-binaphthalene]-2,2'-
 diyl]bis[1,1-diphenyl- (CA INDEX NAME)



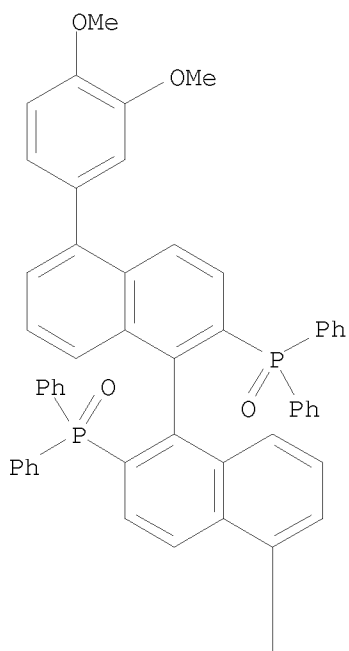
RN 930794-21-1 CAPLUS
 CN Phosphine, 1,1'-[(1R)-5,5'-diphenyl[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-
 diphenyl- (CA INDEX NAME)



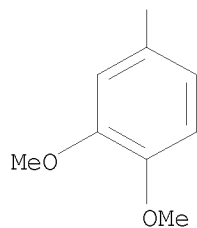
RN 930794-22-2 CAPLUS

CN Phosphine oxide, 1,1'-[(1R)-5,5'-bis(3,4-dimethoxyphenyl)[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)

PAGE 1-A



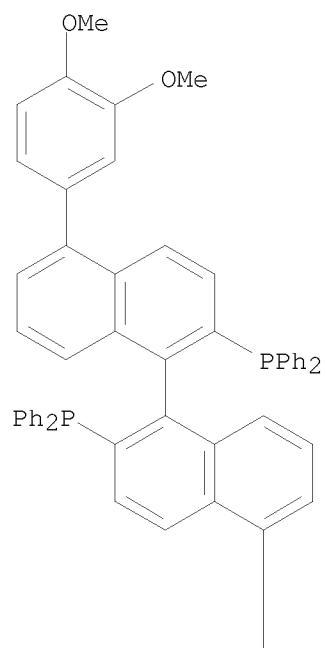
PAGE 2-A



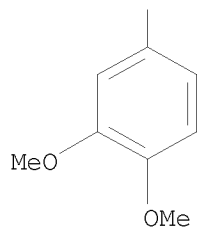
RN 930794-23-3 CAPLUS

CN Phosphine, 1,1'-[(1R)-5,5'-bis(3,4-dimethoxyphenyl)[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)

PAGE 1-A



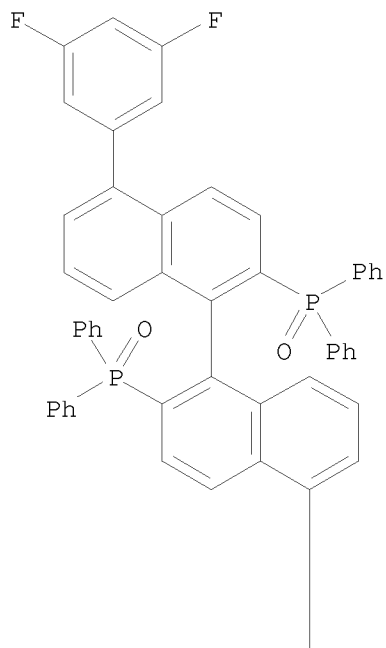
PAGE 2-A



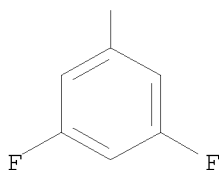
RN 930794-24-4 CAPLUS

CN Phosphine oxide, 1,1'-[(1R)-5,5'-bis(3,5-difluorophenyl)[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)

PAGE 1-A



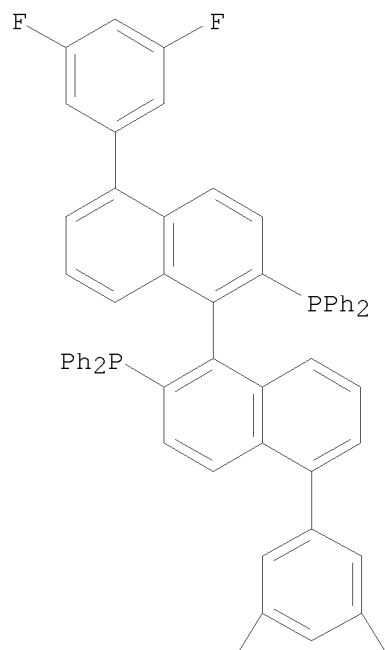
PAGE 2-A



RN 930794-25-5 CAPLUS

CN Phosphine, 1,1'-[(1R)-5,5'-bis(3,5-difluorophenyl)[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)

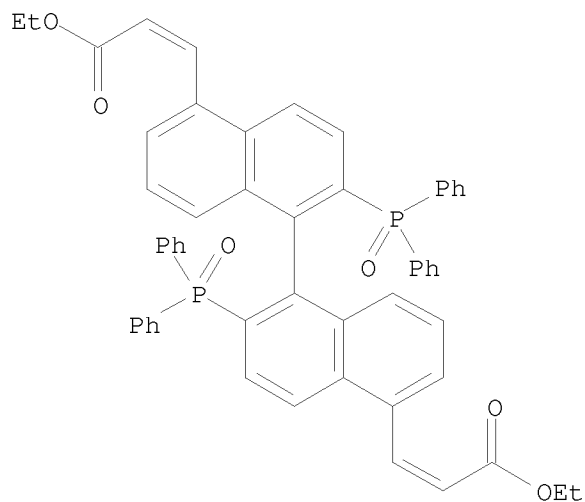
PAGE 1-A



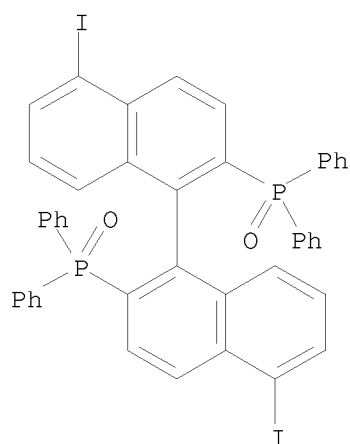
PAGE 2-A



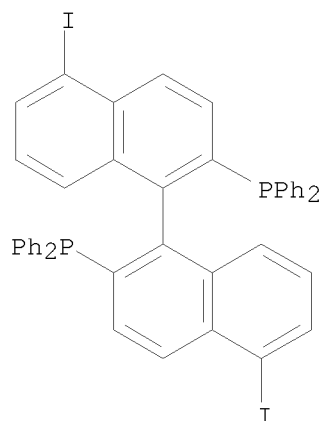
RN 930794-26-6 CAPLUS
CN 2-Propenoic acid, 3,3'-[(1R)-2,2'-bis(diphenylphosphinyl)[1,1'-binaphthalene]-5,5'-diyl]bis-, 1,1'-diethyl ester, (2E,2'E)- (CA INDEX NAME)



IT 871350-54-8P 871350-58-2P 871350-60-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation of binaphthyls as asym. ligands by cross-coupling of
 iodobinaphthyls)
 RN 871350-54-8 CAPLUS
 CN Phosphine oxide, 1,1'-[(1R)-5,5'-diiodo[1,1'-binaphthalene]-2,2'-
 diyl]bis[1,1-diphenyl- (CA INDEX NAME)

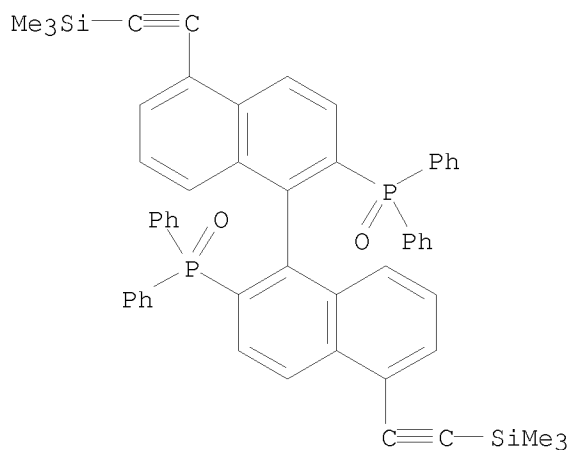


RN 871350-58-2 CAPLUS
 CN Phosphine, 1,1'-[(1R)-5,5'-diiodo[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-
 diphenyl- (CA INDEX NAME)



RN 871350-60-6 CAPLUS

CN Phosphine oxide, 1,1'-[(1R)-5,5'-bis[2-(trimethylsilyl)ethynyl][1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



L3 ANSWER 9 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2007:235675 CAPLUS

DOCUMENT NUMBER: 146:482330

TITLE: A Highly Reusable Catalyst for Enantioselective Ketone Hydrogenation. Catalyst-Organic Frameworks by Alternating ROMP Assembly

AUTHOR(S): Ralph, Corbin K.; Bergens, Steven H.

CORPORATE SOURCE: Department of Chemistry, University of Alberta, Edmonton, AB, T6G 2G2, Can.

SOURCE: Organometallics (2007), 26(7), 1571-1574

CODEN: ORGND7; ISSN: 0276-7333

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

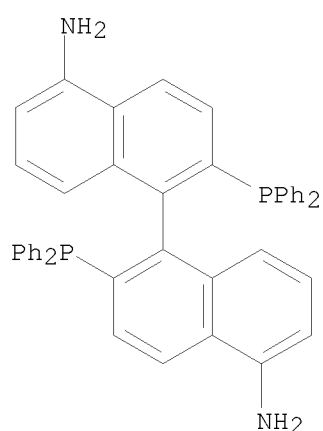
OTHER SOURCE(S): CASREACT 146:482330

AB The alternating ROMP assembly of trans-RuCl₂((R)-5,5'-dinorimido-BINAP)(Py)₂ (5) and COE using RuCl₂(:CHPh)(PCy₃)₂ (7) as the catalyst resulted in an extended, three-dimensional catalyst-organic framework. The catalyst-organic framework was converted to contain Noyori-type active sites that were recycled for 25 times at low catalyst loadings without loss in enantioselectivity or activity and without detectable Ru leaching.

IT 244260-43-3, (R)-5,5'-Diamino-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reusable catalyst for enantioselective ketone hydrogenation made of alternating ROMP polymer frameworks)

RN 244260-43-3 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
 (CA INDEX NAME)

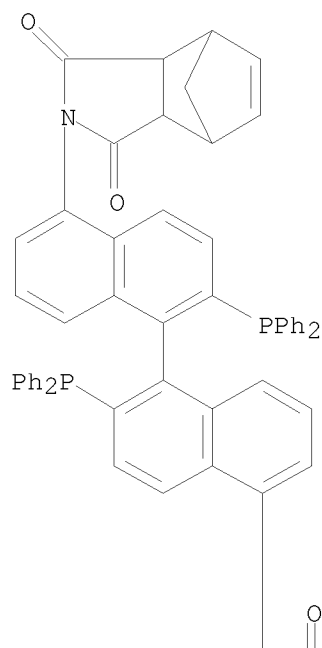


IT 935886-69-4P, (R)-5,5'-N-Bis(cis-5-norbornene-2,3-endo-dicarboximido)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (reusable catalyst for enantioselective ketone hydrogenation made of alternating ROMP polymer frameworks)

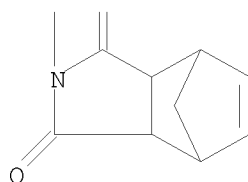
RN 935886-69-4 CAPLUS

CN 4,7-Methano-1H-isoindole-1,3(2H)-dione,
 2,2'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3a,4,7,7a-tetrahydro-, (3aR,3'aR,4S,4'S,7R,7'R,7aS,7'aS)- (CA INDEX NAME)]

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PAGE 2-A



OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)

REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 10 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2007:230189 CAPLUS

DOCUMENT NUMBER: 146:462111

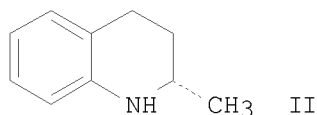
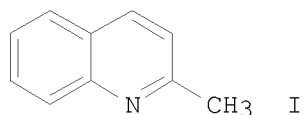
TITLE: Enantioselective Hydrogenation of Quinolines Catalyzed by Ir(BINAP)-Cored Dendrimers: Dramatic Enhancement of Catalytic Activity

AUTHOR(S): Wang, Zhi-Jian; Deng, Guo-Jun; Li, Yong; He, Yan-Mei; Tang, Wei-Jun; Fan, Qing-Hua

CORPORATE SOURCE: Beijing National Laboratory for Molecular Sciences, Center for Chemical Biology, Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China

SOURCE: Organic Letters (2007), 9(7), 1243-1246

PUBLISHER: CODEN: ORLEF7; ISSN: 1523-7060
DOCUMENT TYPE: American Chemical Society
LANGUAGE: Journal
OTHER SOURCE(S): English
GI CASREACT 146:462111



AB The asym. hydrogenation of quinolines, e.g. I, catalyzed by chiral dendritic catalysts derived from BINAP gave the corresponding products, e.g. II, with high enantioselectivities (up to 93%), excellent catalytic activities (TOF up to 3450 h⁻¹), and productivities (TON up to 43,000). In addition, the third-generation catalyst could be recovered by precipitation

and

filtration and reused at least six times with similar enantioselectivity.

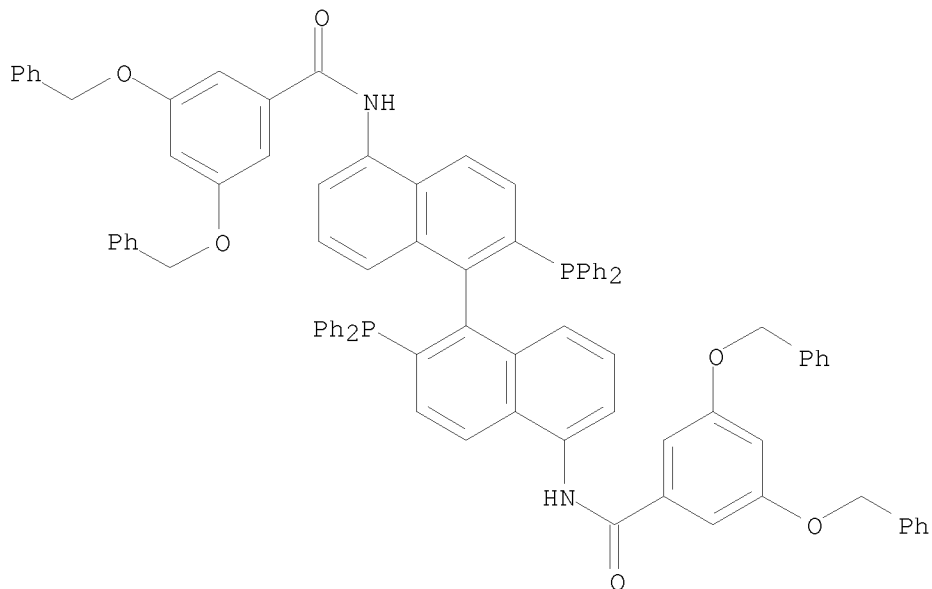
IT 935536-82-6P 935536-83-7P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
USES (Uses)

(asym. synthesis of tetrahydroquinolines via Ir(BINAP)-cored
dendrimer-catalyzed stereoselective hydrogenation of quinolines)

RN 935536-82-6 CAPLUS

CN Benzamide, N,N'-[(1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-
diyl]bis[3,5-bis(phenylmethoxy)- (CA INDEX NAME)

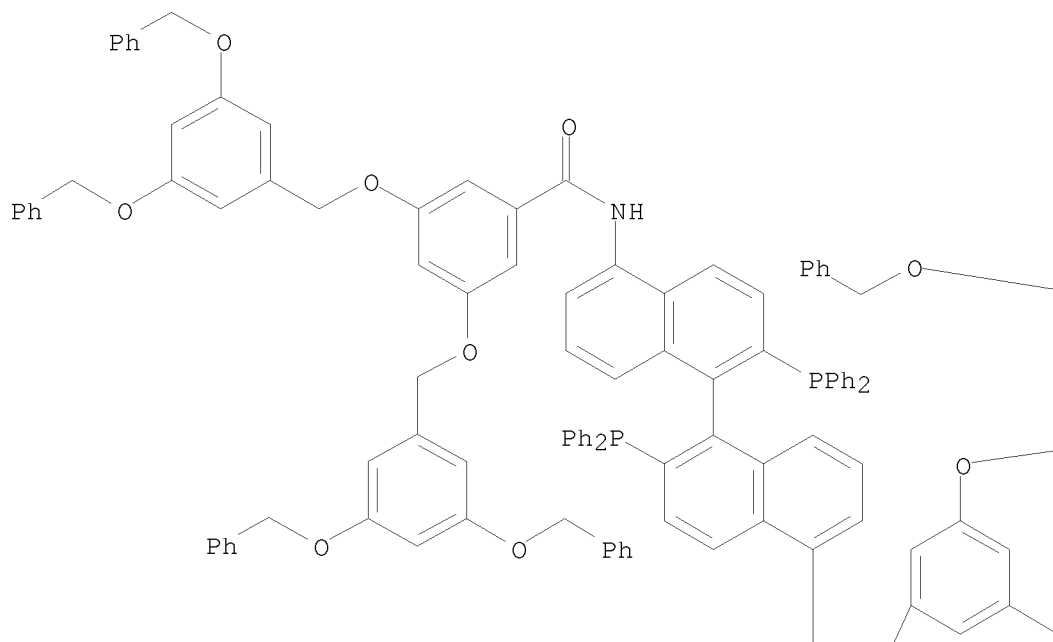


RN 935536-83-7 CAPLUS

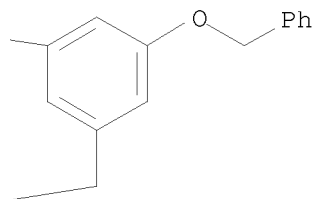
CN Benzamide, N,N'-[(1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-

diyl]bis[3,5-bis[[3,5-bis(phenylmethoxy)phenyl]methoxy]- (CA INDEX NAME)

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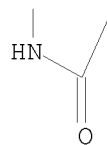


PAGE 1-B

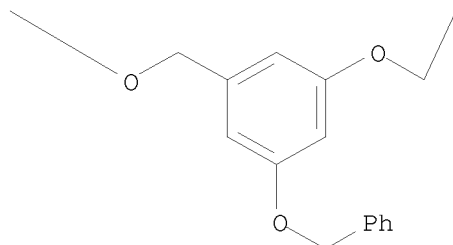


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PAGE 2-A



PAGE 2-B

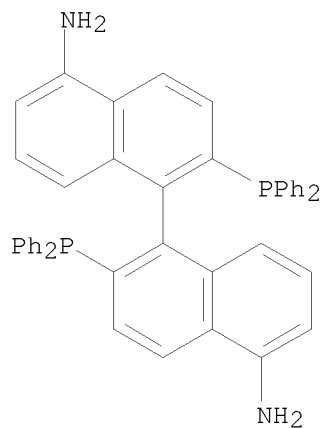


IT 244260-42-2

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of dendritic BINAP ligands via amidation of Frechet-type polyaryl ether dendrons with diamino BINAP)

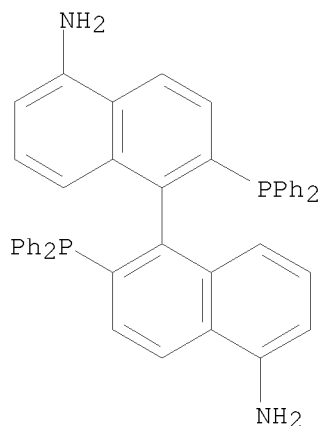
RN 244260-42-2 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1S)-
(CA INDEX NAME)

OS.CITING REF COUNT: 41 THERE ARE 41 CAPLUS RECORDS THAT CITE THIS
RECORD (42 CITINGS)
REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 11 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2006:1183926 CAPLUS

DOCUMENT NUMBER: 147:343481
TITLE: Polyethylene glycol as an environmentally friendly and recyclable reaction medium for enantioselective hydrogenation
AUTHOR(S): Zhou, Hai-Feng; Fan, Qing-Hua; Tang, Wei-Jun; Xu, Li-Jin; He, Yan-Mei; Deng, Guo-Jun; Zhao, Li-Wen; Gu, Lian-Quan; Chan, Albert S. C.
CORPORATE SOURCE: School of Chemistry and Chemical Engineering, Sun Yat-Sen University, Guangzhou, 510275, Peop. Rep. China
SOURCE: Advanced Synthesis & Catalysis (2006), 348(15), 2172-2182
CODEN: ASCAF7; ISSN: 1615-4150
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 147:343481
AB Polyethylene glycol (PEG) was found to be an inexpensive, non-toxic and recyclable reaction medium for ruthenium- and rhodium-catalyzed asym. hydrogenation of 2-arylacrylic acids (Ru-catalyzed C=C bond reduction), enamides (Rh-catalyzed C=C bond reduction), β -keto esters and simple aromatic ketones (Ru-catalyzed C=O bond reduction). In all cases, high catalytic activities and enantioselectivities have been achieved, which are comparable to those obtained in conventional organic solvent systems. The Ru and Rh catalysts prepared with com. available chiral diphosphine ligands could be readily recycled by simple extraction, as in the case of ionic liqs., and reused up to nine times without obvious loss of catalytic activity and enantioselectivity. The reduced products were obtained from the exts. in high isolated yields. These results indicate that PEGs as new reaction media are attractive alternatives to room temperature ionic liqs.
IT 244260-42-2 308795-87-1
RL: CAT (Catalyst use); USES (Uses)
(polyethylene glycol as an environmentally friendly and recyclable reaction medium for enantioselective hydrogenation)
RN 244260-42-2 CAPLUS
CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1S)- (CA INDEX NAME)



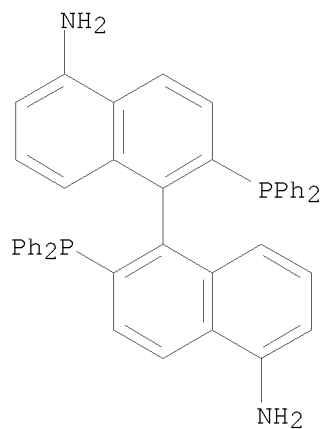
RN 308795-87-1 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with
(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine and
 α -hydro- ω -hydroxypoly(oxy-1,2-ethanediyl) (CA INDEX NAME)

CM 1

CRN 244260-43-3

CMF C44 H34 N2 P2

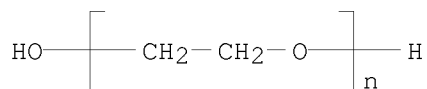


CM 2

CRN 25322-68-3

CMF (C2 H4 O)_n H2 O

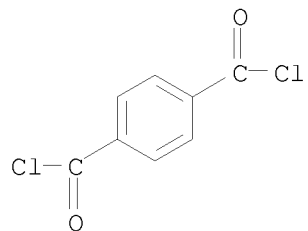
CCI PMS



CM 3

CRN 100-20-9

CMF C8 H4 Cl2 O2



OS.CITING REF COUNT: 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD
(8 CITINGS)
REFERENCE COUNT: 126 THERE ARE 126 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE
FORMAT

L3 ANSWER 12 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2006:184010 CAPLUS

DOCUMENT NUMBER: 144:432506

TITLE: Thermomorphic System with Non-Fluorous Phase-Tagged
Ru(BINAP) Catalyst: Facile Liquid/Solid Catalyst
Separation and Application in Asymmetric Hydrogenation

AUTHOR(S): Huang, Yi-Yong; He, Yan-Mei; Zhou, Hai-Feng; Wu, Lei;
Li, Bao-Lin; Fan, Qing-Hua

CORPORATE SOURCE: Laboratory of Chemical Biology, Institute of
Chemistry, Chinese Academy of Sciences, Beijing,
100080, Peop. Rep. China

SOURCE: Journal of Organic Chemistry (2006), 71(7), 2874-2877
CODEN: JOCEAH; ISSN: 0022-3263

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 144:432506

AB A thermomorphic BINAP derivative was prepared from (S)-5,5'-diamino BINAP and
3,4,5-[Me(CH₂)₁₇O]3C₆H₂CO₂H and applied to Ru-catalyzed asym.

hydrogenation of β -keto esters under homogeneous conditions in 3:1

EtOH-1,4-dioxane at 60 °C with enantioselectivity \leq 98%.

The Ru catalyst was easily recovered by simple cooling and precipitation and
could

be used for at least four cycles without any loss of enantioselectivity.

IT 885315-09-3P

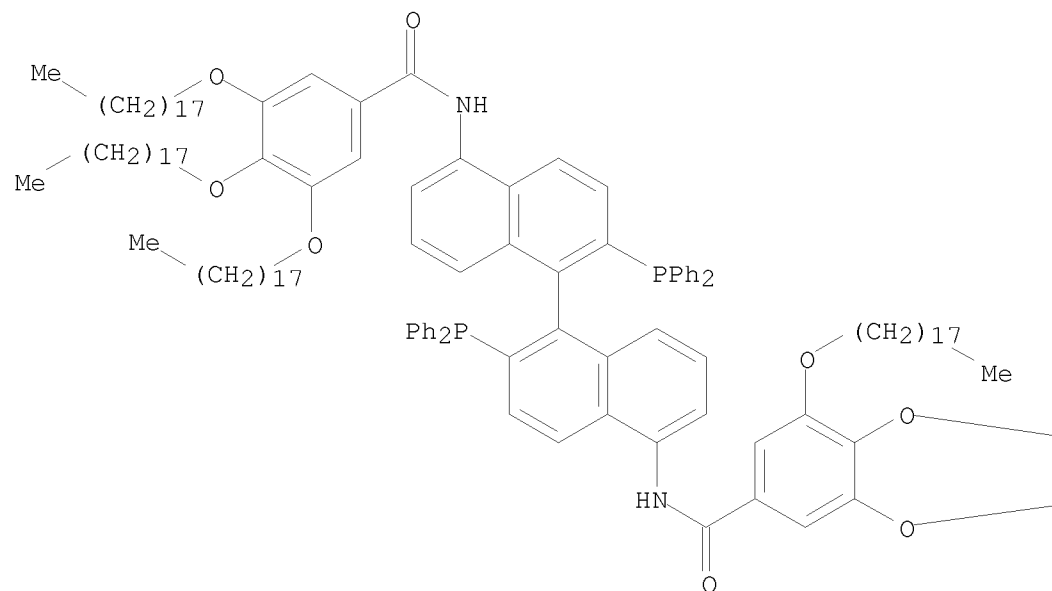
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
USES (Uses)

(thermomorphic Ru(BINAP) catalyst for asym. hydrogenation)

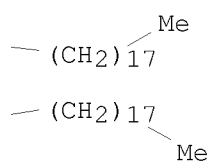
RN 885315-09-3 CAPLUS

CN Benzamide, N,N'-[(1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-
diyl]bis[3,4,5-tris(octadecyloxy)- (9CI) (CA INDEX NAME)

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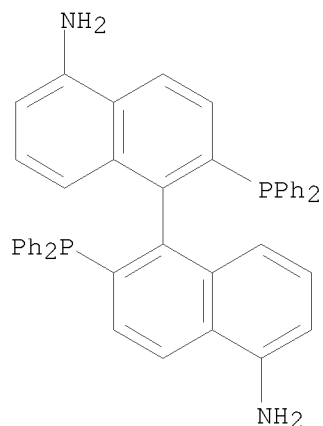


PAGE 1-B



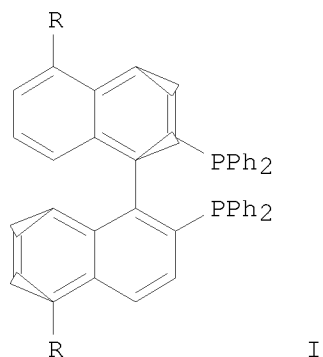
IT 244260-42-2, (S)-5,5'-Diamino-2,2'-bis
 (diphenylphosphino)-1,1'-binaphthol
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (thermomorphic Ru(BINAP) catalyst for asym. hydrogenation)
 RN 244260-42-2 CAPLUS
 CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1S)-

(CA INDEX NAME)



OS.CITING REF COUNT: 14 THERE ARE 14 CAPLUS RECORDS THAT CITE THIS
RECORD (15 CITINGS)
REFERENCE COUNT: 62 THERE ARE 62 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 13 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2005:1146696 CAPLUS
DOCUMENT NUMBER: 144:51305
TITLE: Facile preparation of a new BINAP-based building
block, 5,5'-diiodoBINAP, and its synthetic application
AUTHOR(S): Shimada, Toyoshi; Suda, Masahiko; Nagano, Toyohiro;
Kakiuchi, Kiyomi
CORPORATE SOURCE: Department of Chemical Engineering, Nara National
College of Technology, Nara, 639-1080, Japan
SOURCE: Journal of Organic Chemistry (2005), 70(24),
10178-10181
CODEN: JOCEAH; ISSN: 0022-3263
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 144:51305
GI



AB Nonracemic bis(diphenylphosphino)binaphthyldiphosphines I (R = I, Me₃SiC.tplbond.C, HC.tplbond.C) are prepared chemoselectively using a chemo- and regioselective iodination of (R)-BINAP P,P'-dioxide with bis(pyridine)iodonium tetrafluoroborate as the key step. Treatment of (R)-BINAP dioxide with 3 equivalent of bis(pyridine)iodonium tetrafluoroborate at 25° for 20 h gives the dioxide of I (R = I) in 92% yield with no formation of regioisomers; reaction of (R)-BINAP dioxide with 2 equivalent of bis(pyridine)iodonium tetrafluoroborate for at -30° gives 5-iodo-2,2'-bis(diphenylphosphoryl)-1,1'-binaphthyl in 15% yield because of difficulty in separating the monoiodo compound from starting material. Deoxygenation of the dioxide of I (R = I) with trichlorosilane gives I (R = I); Sonogashira coupling of the dioxide of I (R = I) with trimethylsilylacetylene followed by deoxygenation with Me triflate and lithium aluminum hydride gives I (R = Me₃SiC.tplbond.C), and cleavage of the silyl groups with tetrabutylammonium fluoride yields I (R = HC.tplbond.C). Enantioselective rhodium-catalyzed addition of phenylboronic acid to 2-cyclohexen-1-one in the presence of either BINAP or 5,5'-disubstituted binaphthyldiphosphines yields nonracemic 3-phenylcyclohexanone in 97-99% yields and in 97% ee; while I (R = I, Me₃SiC.tplbond.C) provide 3-phenylcyclohexanone with similar yields and enantioselectivities to those obtained using (R)-BINAP, reaction in the presence of I (R = HC.tplbond.C) leads to no product.

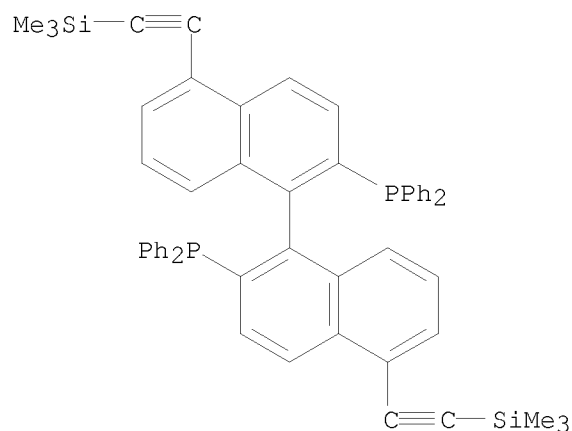
IT 871350-62-8P

RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

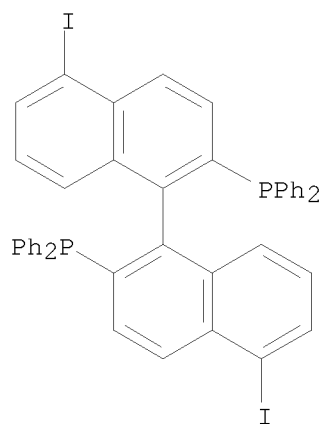
(asym. rhodium-catalyzed addition of phenylboronic acid to cyclohexenone using binaphthyldiphosphines as chiral ligands)

RN 871350-62-8 CAPLUS

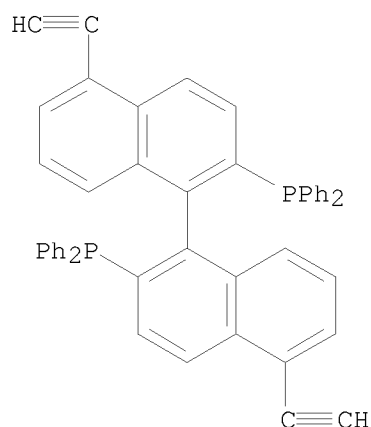
CN Phosphine, 1,1'-[(1R)-5,5'-bis[2-(trimethylsilyl)ethynyl][1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



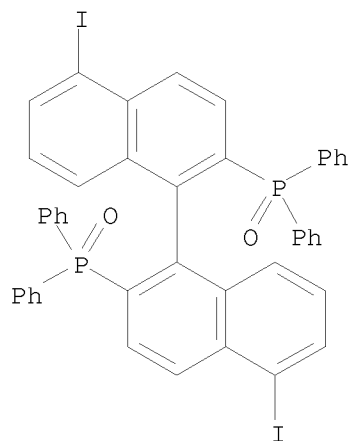
IT 871350-58-2P, 5,5'-Diiodo-(R)-BINAP 871350-64-0P
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
 USES (Uses)
 (asym. rhodium-catalyzed addition of phenylboronic acid to cyclohexenone
 using binaphthyldiphosphines as chiral ligands)
 RN 871350-58-2 CAPLUS
 CN Phosphine, 1,1'-[(1R)-5,5'-diiodo[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-
 diphenyl- (CA INDEX NAME)



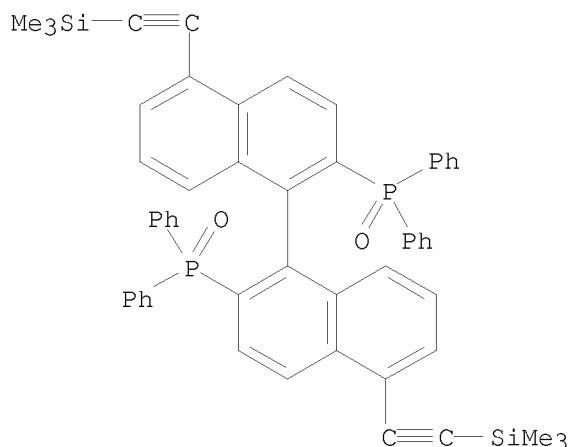
RN 871350-64-0 CAPLUS
 CN Phosphine, 1,1'-[(1R)-5,5'-diethynyl[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-
 diphenyl- (CA INDEX NAME)



IT 871350-54-8P, 5,5'-Diiodo-(R)-BINAP dioxide
 871350-60-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (asym. rhodium-catalyzed addition of phenylboronic acid to cyclohexenone
 using binaphthyldiphosphines as chiral ligands)
 RN 871350-54-8 CAPLUS
 CN Phosphine oxide, 1,1'-[(1R)-5,5'-diiodo[1,1'-binaphthalene]-2,2'-
 diyl]bis[1,1-diphenyl- (CA INDEX NAME)



RN 871350-60-6 CAPLUS
 CN Phosphine oxide, 1,1'-[(1R)-5,5'-bis[2-(trimethylsilyl)ethynyl][1,1'-
 binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 14 THERE ARE 14 CAPLUS RECORDS THAT CITE THIS RECORD (14 CITINGS)
 REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 14 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2005:1020733 CAPLUS

DOCUMENT NUMBER: 143:306189

TITLE: Preparation of pyridinecarboxamides with recyclable catalysts and without the use of halogenation agents

INVENTOR(S): Shimazu, Hidetaka; Tamashima, Tomoyuki

PATENT ASSIGNEE(S): Koei Chemical Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005255544	A	20050922	JP 2004-65682	20040309
PRIORITY APPLN. INFO.:			JP 2004-65682	20040309

AB Pyridinecarboxamides are prepared by isomerization of pyridinealoximes in multiphase solvent mixts. in the presence of (A) mixts. of hydrophilic phosphines and transition metals, or (B) water-soluble complexes comprising the phosphines and metals. Thus, 4-pyridinealoxime was refluxed with sulfonated BINAP and RuCl₂(cod) in 1-butyl-4-methylimidazolium PF₆ salt and C₆H₆ for 24 h, then the ionic liquid was recovered, which was used in the same reaction 4 more times. Total yield of 4-pyridinecarboxamide was 94.5%.

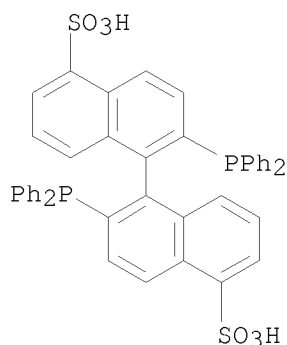
IT 864956-92-3P, Disodium 2,2'-bis(diphenylphosphino)-[1,1'-binaphthalene]-5,5'-disulfonate

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
 USES (Uses)

(preparation of pyridinecarboxamides from pyridinealoximes with recyclable catalysts in multiphase solvent mixts.)

RN 864956-92-3 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-disulfonic acid, 2,2'-bis(diphenylphosphino)-, sodium salt (1:2) (CA INDEX NAME)



●2 Na

L3 ANSWER 15 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:988324 CAPLUS

DOCUMENT NUMBER: 142:430342

TITLE: Dendronized poly(Ru-BINAP) complexes: Highly effective and easily recyclable catalysts for asymmetric hydrogenation

AUTHOR(S): Deng, Guo-Jun; Yi, Bing; Huang, Yi-Yong; Tang, Wei-Jun; He, Yan-Mei; Fan, Qing-Hua

CORPORATE SOURCE: Laboratory of Chemical Biology, Center for Molecular Science, Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China

SOURCE: Advanced Synthesis & Catalysis (2004), 346(12), 1440-1444

CODEN: ASCAF7; ISSN: 1615-4150

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 142:430342

AB A new kind of dendronized polymeric chiral BINAP ligands has been synthesized and applied to the Ru-catalyzed asym. hydrogenation of simple aryl ketones and 2-arylacrylic acids. These dendronized poly(Ru-BINAP) catalysts exhibited high catalytic activity and enantioselectivity, very similar to those obtained with the corresponding parent Ru(BINAP) and the Ru(BINAP)-cored dendrimers. It was found that the pendant dendrons had a major impact on the solubility and the catalytic properties of the polymeric ligands. These polymeric catalysts could be easily recovered from the reaction solution by using solvent precipitation, and the reused catalyst showed no

loss of activity or enantioselectivity.

IT 850552-65-7P 850552-66-8P 850645-52-2P

850645-53-3P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(preparation of dendronized poly(ruthenium-BINAP) complexes as highly

effective and easily recyclable catalysts for asym. hydrogenation of aryl ketones and arylacrylic acids)

RN 850552-65-7 CAPLUS

CN Poly[iminocarbonyl[5-[[3,5-bis[[3,5-bis(phenylmethoxy)phenyl]methoxy]phenyl]methoxy]-1,3-phenylene]carbonylimino[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

RN 850552-66-8 CAPLUS

CN Poly[iminocarbonyl[5-[[3,5-bis[[3-[[3,5-bis(phenylmethoxy)phenyl]methoxy]-5-(phenylmethoxy)phenyl]methoxy]phenyl]methoxy]-1,3-phenylene]carbonylimino[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

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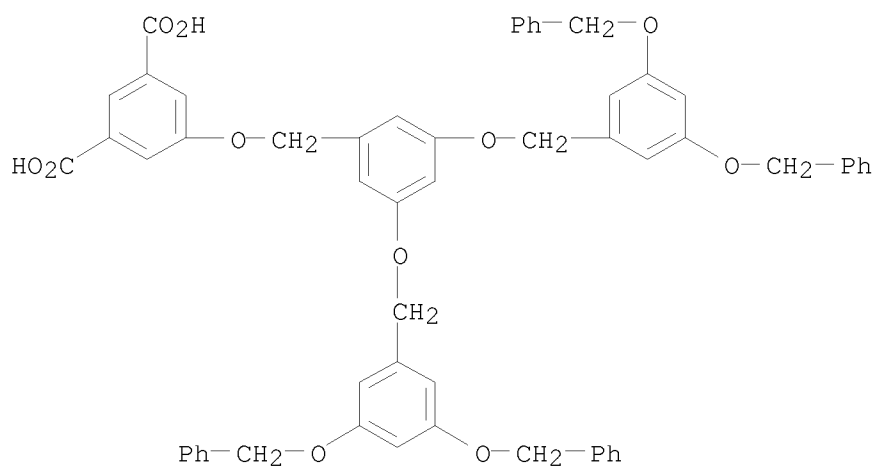
RN 850645-52-2 CAPLUS

CN 1,3-Benzenedicarboxylic acid, 5-[[3,5-bis[[3,5-bis(phenylmethoxy)phenyl]methoxy]phenyl]methoxy]-, polymer with (1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine (9CI) (CA INDEX NAME)

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CRN 850552-64-6

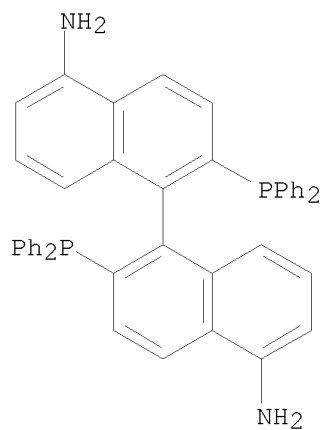
CMF C57 H48 O11



CM 2

CRN 244260-43-3

CMF C44 H34 N2 P2



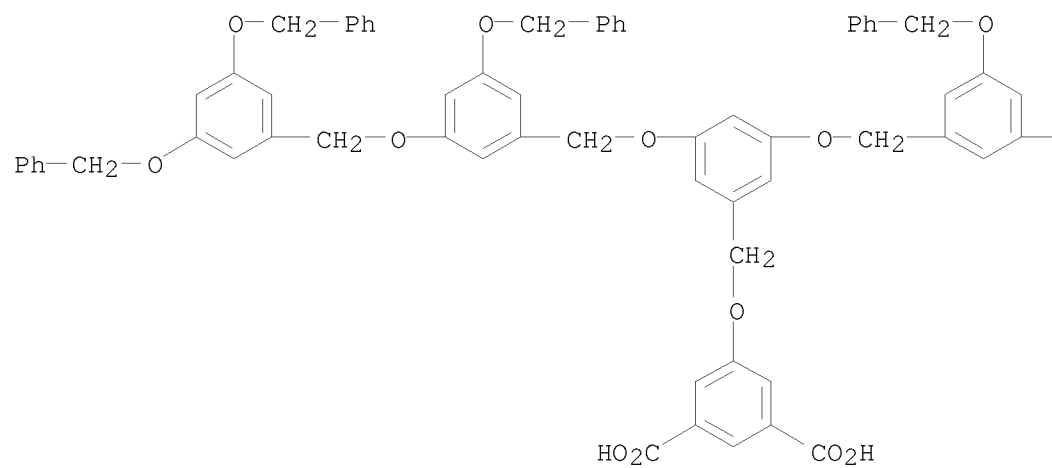
RN 850645-53-3 CAPLUS

CN 1,3-Benzenedicarboxylic acid, 5-[[[3,5-bis[[[3-[[[3,5-bis(phenylmethoxy)phenyl]methoxy]-5-(phenylmethoxy)phenyl]methoxy]phenyl]methoxy]-, polymer with (1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine (9CI)
(CA INDEX NAME)

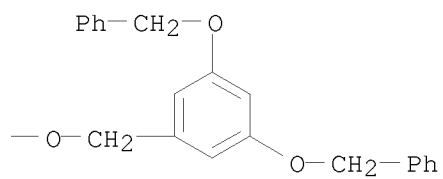
CM 1

CRN 850552-63-5
CMF C85 H72 O15

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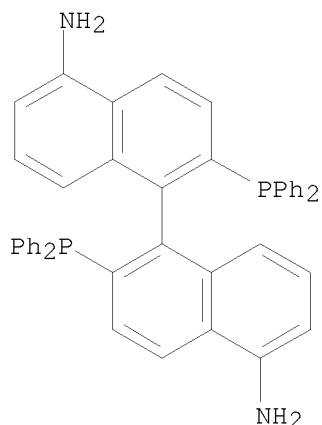


PAGE 1-B



CM 2

CRN 244260-43-3
CMF C44 H34 N2 P2

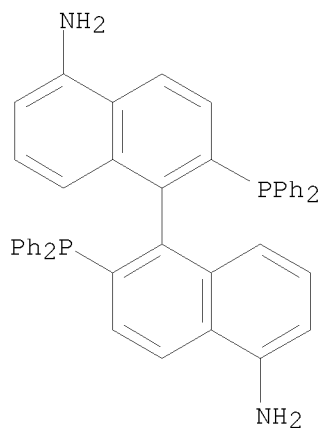


IT 244260-43-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of dendronized poly(ruthenium-BINAP) complexes as highly effective and easily recyclable catalysts for asym. hydrogenation of aryl ketones and arylacrylic acids)

RN 244260-43-3 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
(CA INDEX NAME)

OS.CITING REF COUNT: 22 THERE ARE 22 CAPLUS RECORDS THAT CITE THIS
RECORD (23 CITINGS)
REFERENCE COUNT: 60 THERE ARE 60 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 16 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:884316 CAPLUS

DOCUMENT NUMBER: 143:153509

TITLE: Chiral phosphine ligand of dendritic molecule and its
application

INVENTOR(S): Fan, Qinghua; Deng, Guojun; Chen, Xiaomin

PATENT ASSIGNEE(S): Institute of Chemistry, Chinese Academy of Sciences,

SOURCE: Peop. Rep. China
Faming Zhuanli Shenqing Gongkai Shuomingshu, 17 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1465608	A	20040107	CN 2002-124391	20020621
CN 100537636	C	20090909		
PRIORITY APPLN. INFO.:			CN 2002-124391	20020621

OTHER SOURCE(S): CASREACT 143:153509

AB The chiral phosphine ligand of dendritic mol. is prepared by condensation reaction of dendritic mol. synthon with chiral phosphine compound through the linkage of amide group, ester group, or ureido. There are reactive groups (such as carboxy, amino, hydroxy, or isocyanate ester) at the end and alkyl at outer layer of the dendritic mol. synthon. The chiral phosphine compound is 5,5'-diamino-2,2'-bis(diphenylphosphino)-1,1'-binaphthalene, 3,4-bis(diphenylphosphino)pyrrolidine, 4-diphenylphosphino-2-diphenylphosphinomethylpyrrolidine. The chiral phosphine ligand may be used in asym. hydrogenation of alpha-unsatd. aromatic carboxylic acid and alpha-dehydroamino acid.

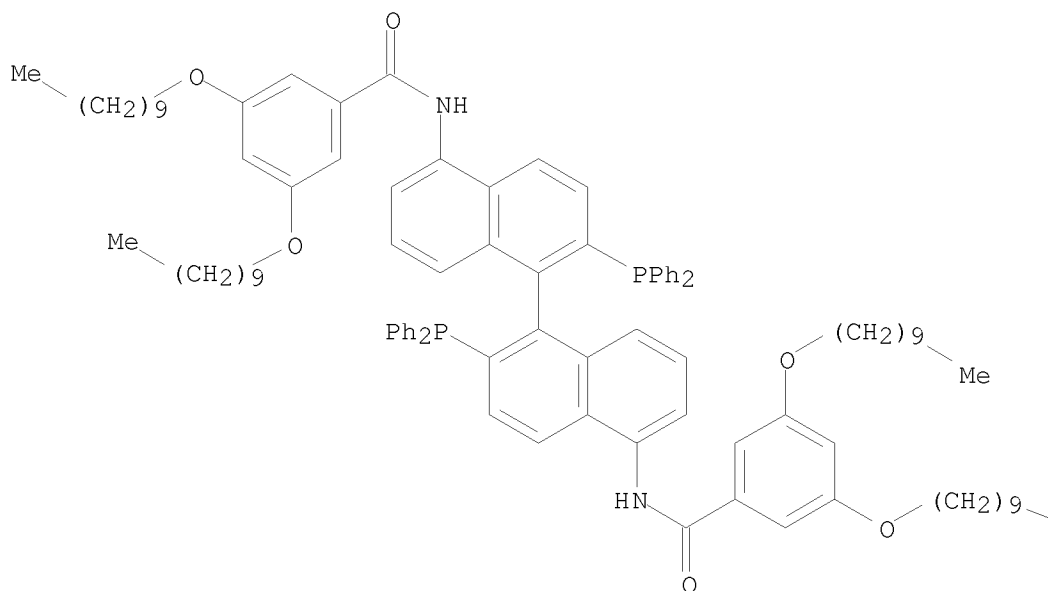
IT 483985-21-3P

RL: IMF (Industrial manufacture); PREP (Preparation)
(for synthesis of chiral phosphine ligand of dendritic mol.)

RN 483985-21-3 CAPLUS

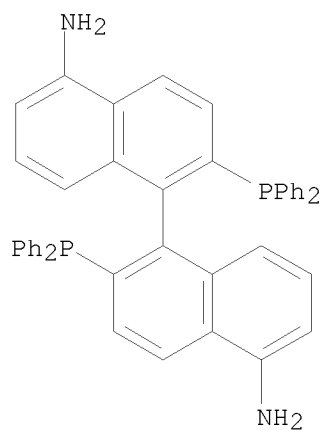
CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis(decyloxy)- (9CI) (CA INDEX NAME)

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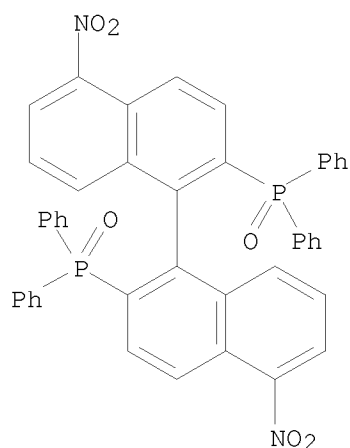


Me

IT 244260-43-3P 845892-20-8P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
(Reactant or reagent)
(for synthesis of chiral phosphine ligand of dendritic mol.)
RN 244260-43-3 CAPLUS
CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
(CA INDEX NAME)



RN 845892-20-8 CAPLUS
CN Phosphine oxide, [(1R)-5,5'-dinitro[1,1'-binaphthalene]-2,2'-
diyl]bis[diphenyl- (9CI) (CA INDEX NAME)

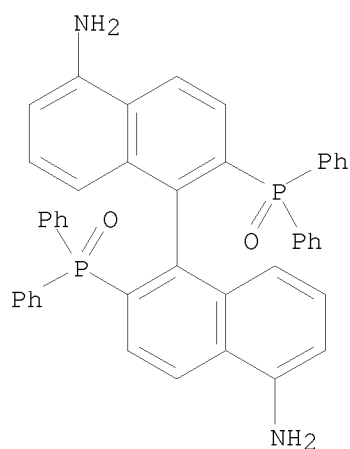


IT 114317-09-8

RL: RCT (Reactant); RACT (Reactant or reagent)
(for synthesis of chiral phosphine ligand of dendritic mol.)

RN 114317-09-8 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphinyl)- (CA INDEX NAME)



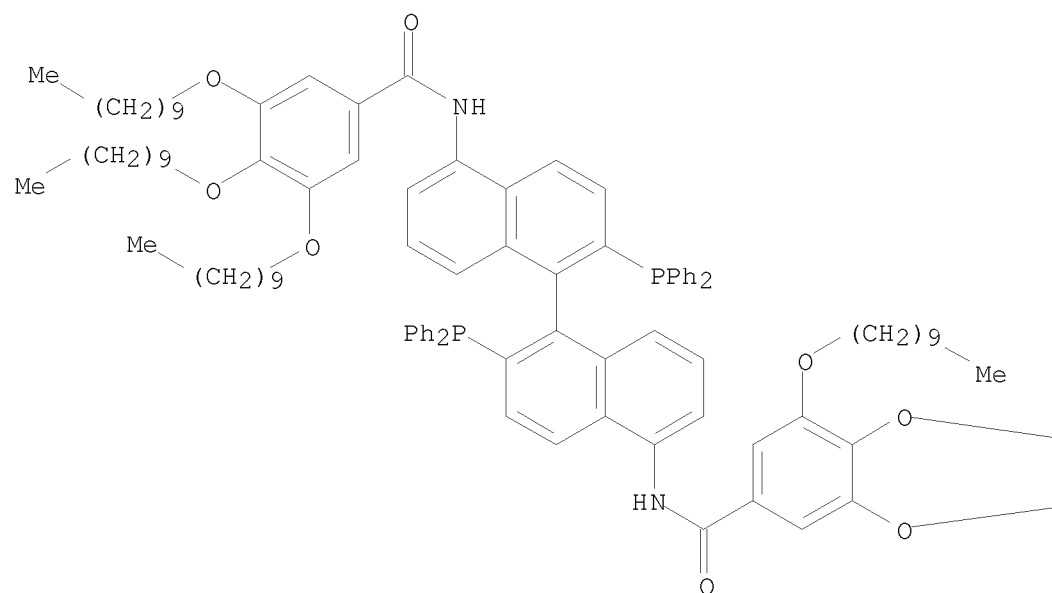
IT 471863-91-9P

RL: IMF (Industrial manufacture); PREP (Preparation)
(synthesis of chiral phosphine ligand of dendritic mol.)

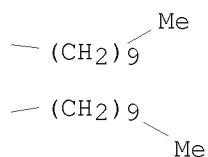
RN 471863-91-9 CAPLUS

CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,4,5-tris(decyloxy)- (9CI) (CA INDEX NAME)

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IT 483985-23-5P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

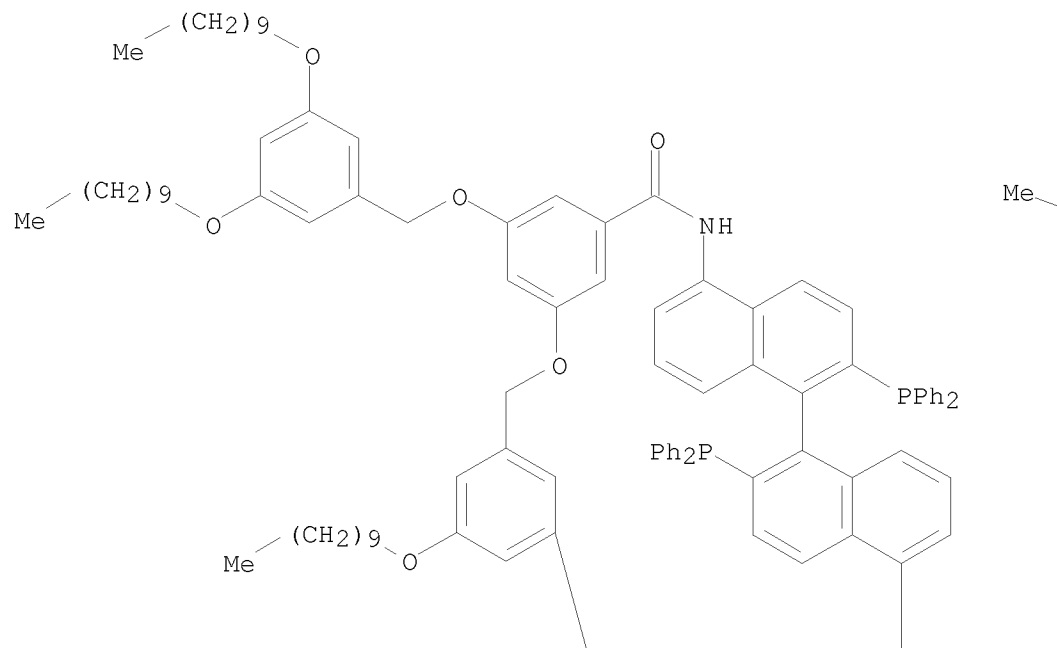
(synthesis of chiral phosphine ligand of dendritic mol.)

RN 483985-23-5 CAPLUS

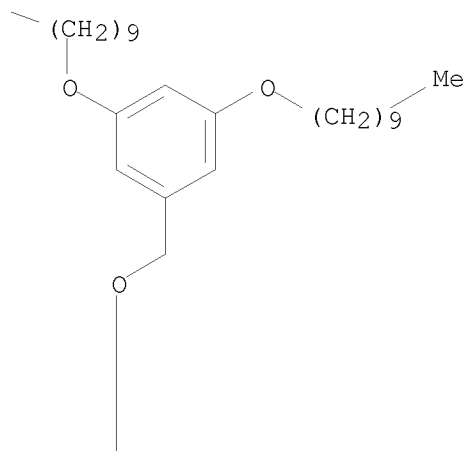
CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-

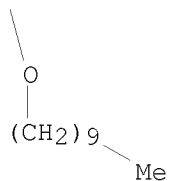
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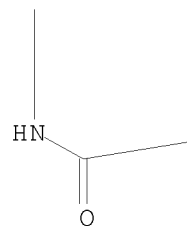


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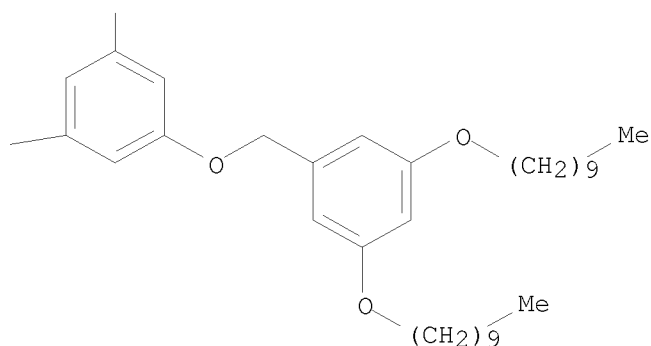




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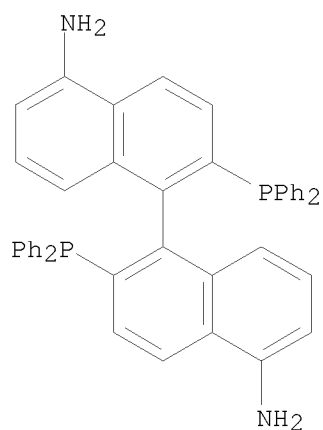


L3 ANSWER 17 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2004:762978 CAPLUS
DOCUMENT NUMBER: 142:261284
TITLE: Improved synthesis of 5,5-diamino BINAP and application to asymmetric hydrogenation
AUTHOR(S): Huang, Yi-Yong; Deng, Guo-Jun; Wang, Xia-Yu; He, Yan-Mei; Fan, Qing-Hua
CORPORATE SOURCE: College of Chemistry, Xiangtan University, Xiangtan, 411105, Peop. Rep. China
SOURCE: Chinese Journal of Chemistry (2004), 22(9), 891-893
CODEN: CJOCEV; ISSN: 1001-604X
PUBLISHER: Science Press
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 142:261284
AB 5,5-Diamino BINAP has been synthesized via three steps using BINAPO as starting material with high reaction yield. The present method needed only a stoichiometric quantity of nitric acid in the step of nitration of BINAPO, giving almost quant. reaction yield. Based on 5,5-diamino BINAP, three other new BINAP derivs. have been synthesized. These modified BINAP ligands showed better catalytic properties as compared to BINAP itself in the asym. hydrogenation of 2-(6-methoxy-2-naphthyl)acrylic acid.
IT 244260-43-3P 566932-78-3P 845891-02-3P
845891-04-5P
RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(improved synthesis of 5,5-diamino BINAP and application to asym.
hydrogenation of 2-(6-methoxy-2-naphthyl)acrylic acid)

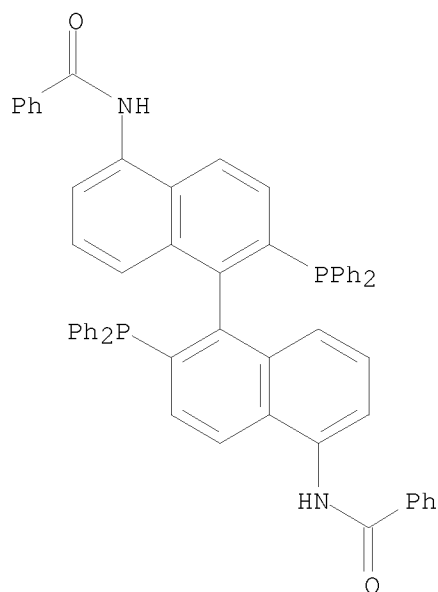
RN 244260-43-3 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
(CA INDEX NAME)



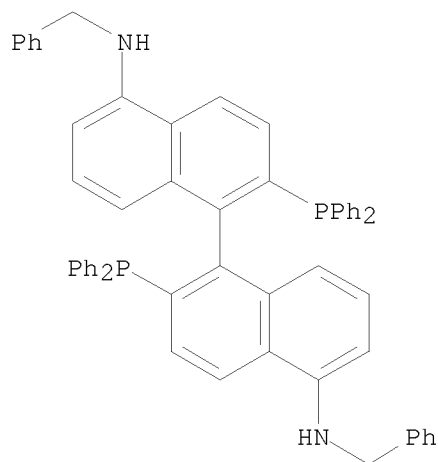
RN 566932-78-3 CAPLUS

CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-
diyl]bis- (9CI) (CA INDEX NAME)



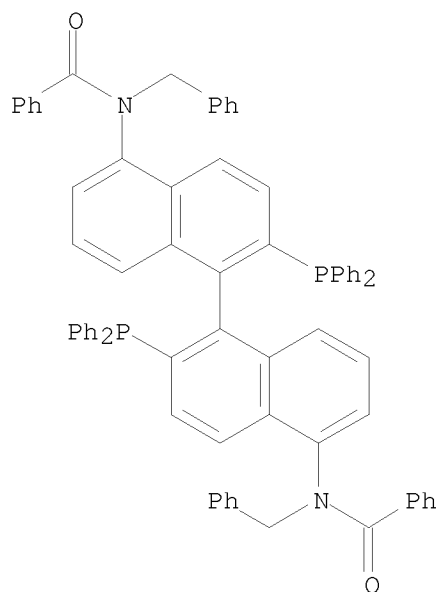
RN 845891-02-3 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine,
2,2'-bis(diphenylphosphino)-N,N'-bis(phenylmethyl)-, (1R)- (9CI) (CA
INDEX NAME)



RN 845891-04-5 CAPLUS

CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[N-(phenylmethyl)- (9CI) (CA INDEX NAME)



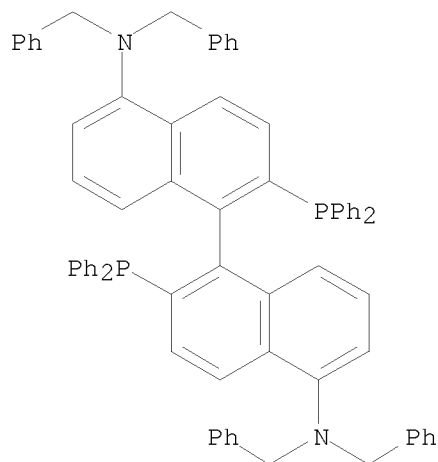
IT 845891-07-8P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

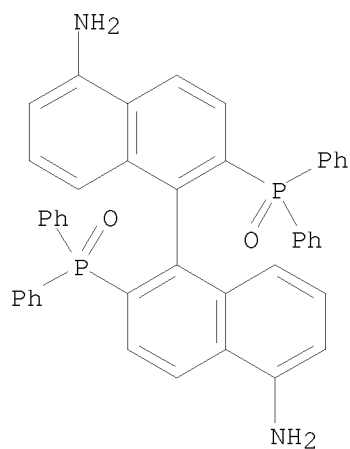
(improved synthesis of 5,5-diamino BINAP and application to asym. hydrogenation of 2-(6-methoxy-2-naphthyl)acrylic acid)

RN 845891-07-8 CAPLUS

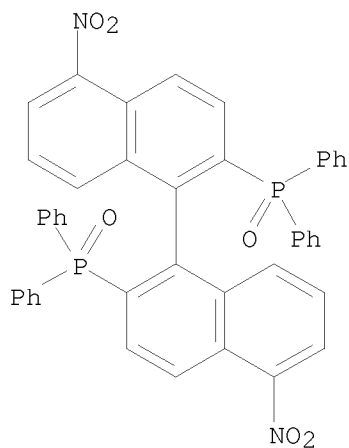
CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-N,N,N',N'-tetrakis(phenylmethyl)-, (1R)- (9CI) (CA INDEX NAME)



IT 114317-09-8P 845892-20-8P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (improved synthesis of 5,5-diamino BINAP and application to asym.
 hydrogenation of 2-(6-methoxy-2-naphthyl)acrylic acid)
 RN 114317-09-8 CAPLUS
 CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphinyl)- (CA
 INDEX NAME)



RN 845892-20-8 CAPLUS
 CN Phosphine oxide, [(1R)-5,5'-dinitro[1,1'-binaphthalene]-2,2'-
 diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD
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REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 18 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:733165 CAPLUS

DOCUMENT NUMBER: 141:401500

TITLE: Supramolecular assembly of a series of chiral
dendrimers in interfacial films

AUTHOR(S): Yuan, Jing; Deng, Guojun; Fan, Qinghua; Liu, Minghua

CORPORATE SOURCE: CAS Key Laboratory of Colloid and Interface Science,
Center for Molecular Science, Institute of Chemistry,
The Chinese Academy of Sciences, Beijing, 100080,
Peop. Rep. China

SOURCE: Thin Solid Films (2004), 466(1-2), 295-302

CODEN: THSFAP; ISSN: 0040-6090

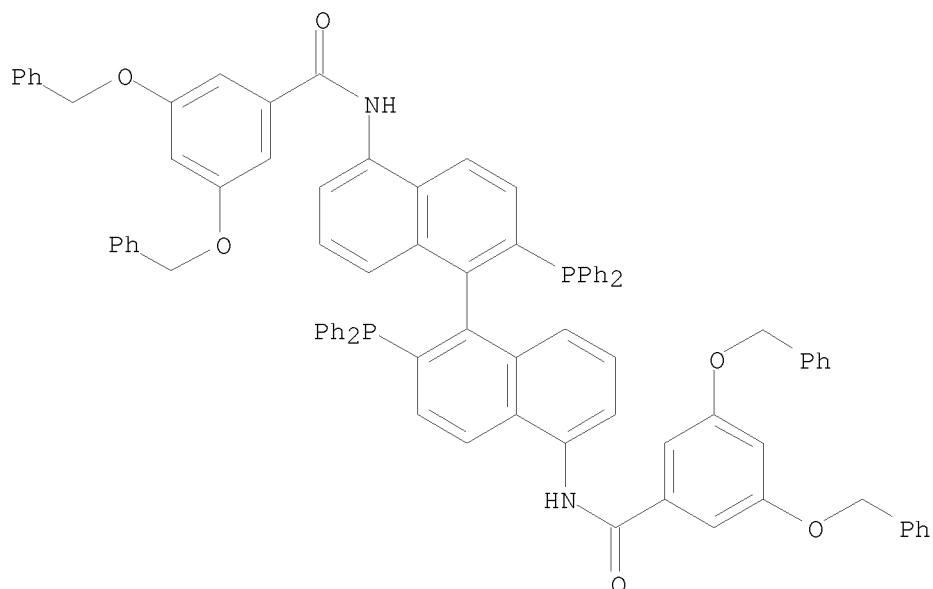
PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

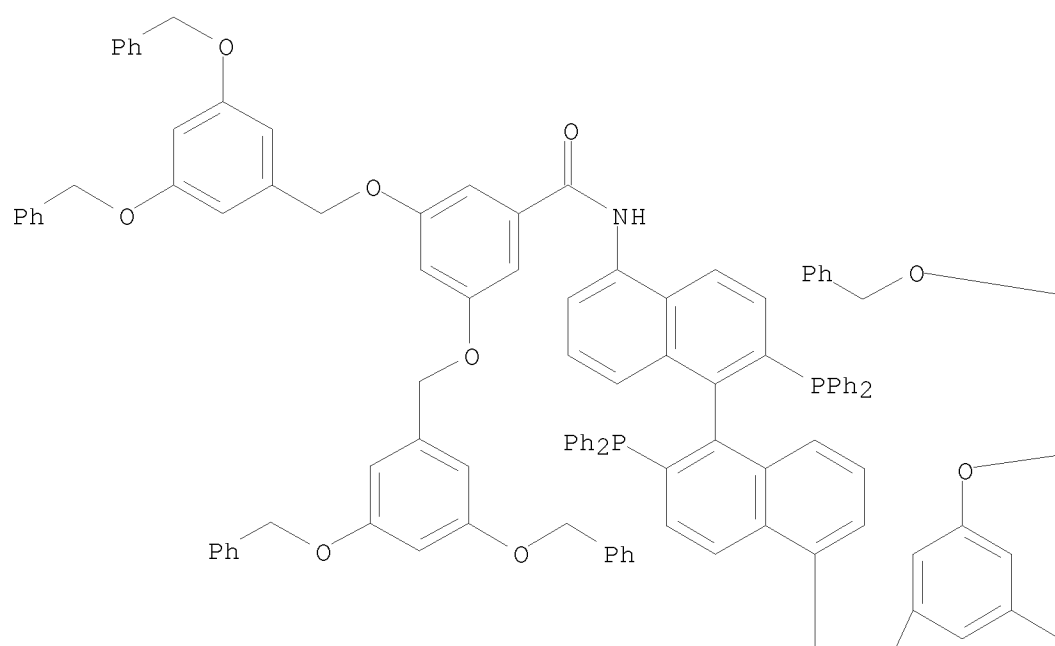
AB Supramol. assembly and interfacial properties of a series of novel binaphthyl containing dendrimers from generation 1 through generation 4 have been investigated at the air/water interface and in solid substrates. Due to the lack of either long alkyl chains or strong hydrophilic groups, the dendrimer mols. tend to aggregate together to form stable two-dimensional ultrathin films, as verified by π -A and A-t measurements. Atomic force microscope (AFM) measurements of the transferred one-layer ultrathin films indicate that all the dendrimers show disk-like morphologies, which could be varied in particle size upon changing the surface pressure. The height profiles reveal that the height of the disks is between that of a monolayer and a bilayer, indicating that they are formed due to the aggregation of dendrimers with a distortion and/or partial overlapping. CD (CD) spectra of the transferred multilayer films show Cotton effects due to the exciton couplet of the aromatic moieties adjacent to the bis(diphenylphosphino)-binaphthyl moiety, which is an active catalytic site for the dendrimer. With the increment of the generation, the intensity of the Cotton effects increased, suggesting that the optical active site of the dendrimer can be controlled by the outside wedge.

IT 286015-10-9 286015-11-0
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP
(Physical process); PROC (Process)
(supramolecular self-assembly chiral dendrimer and its surface
structure)
RN 286015-10-9 CAPLUS
CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-
diyl]bis[3,5-bis(phenylmethoxy)- (9CI) (CA INDEX NAME)

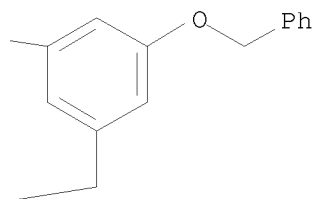


RN 286015-11-0 CAPLUS
CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-
diyl]bis[3,5-bis[[3,5-bis(phenylmethoxy)phenyl]methoxy]- (9CI) (CA INDEX
NAME)

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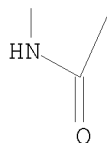


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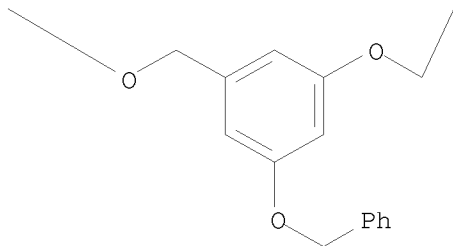


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OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)
REFERENCE COUNT: 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 19 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:626140 CAPLUS

DOCUMENT NUMBER: 141:296154

TITLE: Enantioselective catalytic asymmetric hydrogenation of ethyl acetoacetate in room temperature ionic liquids

AUTHOR(S): Berthod, Mikael; Joerger, Jean-Michel; Mignani, Gerard; Vaultier, Michel; Lemaire, Marc

CORPORATE SOURCE: UMR 5181, UCBL, CPE, Laboratoire de Catalyse et Synthese Organique, Villeurbanne, 69622, Fr.

SOURCE: Tetrahedron: Asymmetry (2004), 15(14), 2219-2221
CODEN: TASYE3; ISSN: 0957-4166

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 141:296154

AB Ruthenium complexes of bis-ammonio-substituted BINAP ligands catalyze asym. hydrogenation of Et acetoacetate in imidazolium, pyridinium and phosphonium room-temperature ionic liqs. 4,4'-Bis(aminomethyl)-BINAP and 5,5'-bis(aminomethyl)-BINAP were protonated to give corresponding hydrobromides and complexed in situ with [Ru(η^3 -2-methylallyl)₂(COD)] to give ruthenium dibromo complexes (9, 10), active in asym. hydrogenation of Et acetoacetate in 1-butyl-3-methylimidazolium hexafluorophosphate (1), N,N-bis(trifluoromethanesulfonyl)imide (2), tetrafluoroborate (3), 1-butylpyridinium N,N-bis(trifluoromethanesulfonyl)imide (4), tricyclohexyl(tetradecyl)phosphonium chloride (5) and N,N-bis(trifluoromethanesulfonyl)imide (6) ionic liqs. at room temperature Complete conversion and good selectivity were obtained. Recycling by simple extraction with pentane was also possible.

IT 681244-51-9

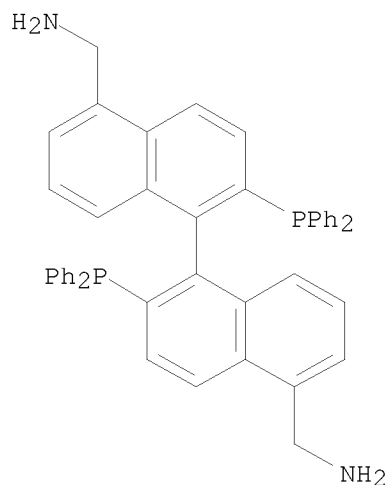
RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES

(Uses)

(protonation, complexation; asym. hydrogenation of Et acetoacetate in ionic liqs. at room temperature in presence of ruthenium modified ammoniomethyl BINAP catalyst)

RN 681244-51-9 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-, (1R)- (CA INDEX NAME)



OS.CITING REF COUNT: 35 THERE ARE 35 CAPLUS RECORDS THAT CITE THIS RECORD (37 CITINGS)
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 20 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:546440 CAPLUS

DOCUMENT NUMBER: 141:107944

TITLE: Diphosphines, preparation and uses thereof for manufacture of ligands for metal complex catalysts

INVENTOR(S): Lemaire, Marc; Saluzzo, Christine; Berthod, Mikael

PATENT ASSIGNEE(S): Rhodia Chimie, Fr.; Centre National de la Recherche Scientifique

SOURCE: PCT Int. Appl., 78 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004056483	A1	20040708	WO 2003-FR3782	20031217
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FR 2849036	B1	20050520		
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IN 2005CN01258	A	20070622	IN 2005-CN1258	20050615
US 20070010695	A1	20070111	US 2006-539640	20060921
IN 2007CN01851	A	20071116	IN 2007-CN1851	20070501
IN 2007CN01852	A	20071116	IN 2007-CN1852	20070501
PRIORITY APPLN. INFO.:			FR 2002-16086	A 20021218
			FR 2003-4392	A 20030409
			FR 2003-5255	A 20030429
			WO 2003-FR3782	W 20031217
			IN 2005-CN1258	A3 20050615

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): CASREACT 141:107944; MARPAT 141:107944

AB Binaphthyl-2,2'-diphosphines having groups in the 5 and 5' positions are
 manufactured and exhibit complexing ability with Rh, Ru, Re, Ir, Co, Ni, Pt, or
 Pd to form catalysts for reactions such as asym. hydrogenation. A typical
 asym. hydrogenation catalyst was manufactured by oxidation of (S)-BINAP,
 bromination of the resulting diphosphine oxide, reaction of the resulting
 diphosphine oxide 5,5'-dibromide with Cu(CN)2, reduction of the resulting
 diphosphine oxide 5,5'-dicyanide with PhSiH3, reduction of the resulting
 diphosphine 5,5'-dicyanide with LiAlH4, polymerization of the resulting
 (S)-5,5'-bis(aminomethyl)BINAP with tolylene 2,6-diisocyanate, and
 complexing the resulting polyurea with Ru.

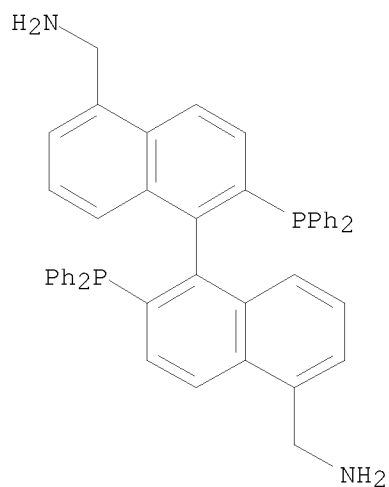
IT 681244-51-9P 701935-24-2P 701935-25-3P
 709640-82-4P 717137-70-7P 717908-79-7P

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);
 USES (Uses)

(5,5'-disubstituted binaphthyldiphosphines for manufacture of monomeric and
 polymeric ligands for metal complex catalysts for asym. reactions)

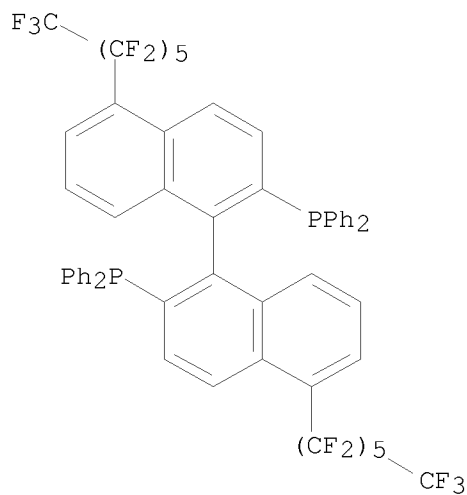
RN 681244-51-9 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-,
 (1R)- (CA INDEX NAME)



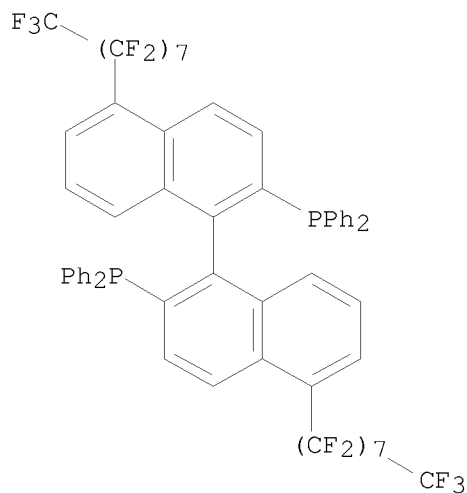
RN 701935-24-2 CAPLUS

CN Phosphine, [(1R)-5,5'-bis(tridecafluorohexyl)[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



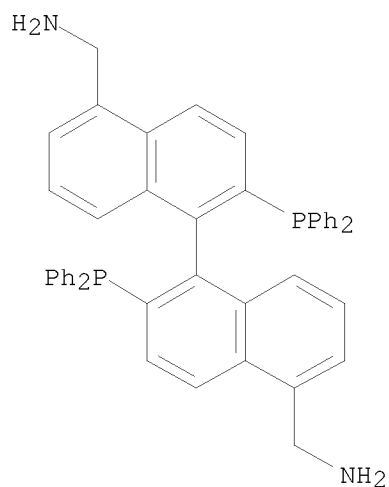
RN 701935-25-3 CAPLUS

CN Phosphine, 1,1'-[(1R)-5,5'-bis(1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluorooctyl)[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



RN 709640-82-4 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-,
(1S)- (9CI) (CA INDEX NAME)



RN 717137-70-7 CAPLUS

CN Poly[iminocarbonylimino(2-methyl-1,3-phenylene)iminocarbonyliminomethylene[(1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]methylene] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

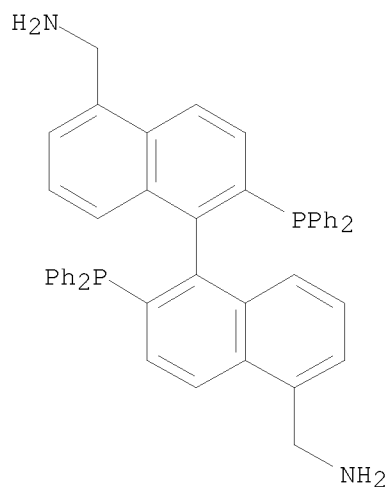
RN 717908-79-7 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-, (1S)-, polymer with 1,3-diisocyanato-2-methylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 709640-82-4

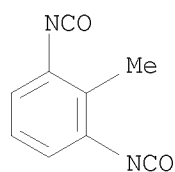
CMF C46 H38 N2 P2



CM 2

CRN 91-08-7

CMF C9 H6 N2 O2



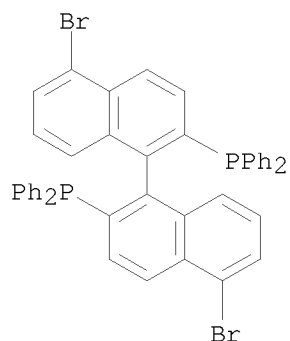
IT 717137-72-9P 717137-73-0P

RL: IMF (Industrial manufacture); PREP (Preparation)

(intermediate; 5,5'-disubstituted binaphthyldiphosphines for manufacture of monomeric and polymeric ligands for metal complex catalysts for asym. reactions)

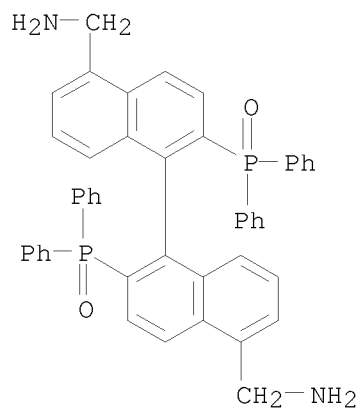
RN 717137-72-9 CAPLUS

CN Phosphine, (5,5'-dibromo[1,1'-binaphthalene]-2,2'-diyl)bis[diphenyl- (9CI) (CA INDEX NAME)



RN 717137-73-0 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphinyl)-
(CA INDEX NAME)



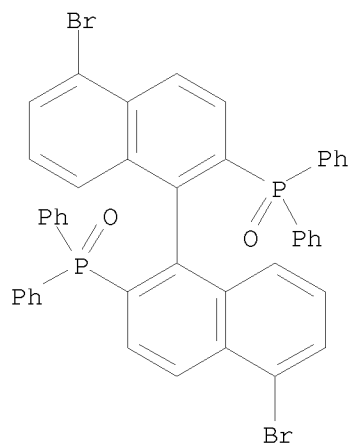
IT 681244-37-1P 681244-41-7P 681244-45-1P
701935-19-5P 709640-79-9P 709640-80-2P
709640-81-3P 717908-78-6P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
(Reactant or reagent)

(intermediate; 5,5'-disubstituted binaphthyldiphosphines for manufacture of
monomeric and polymeric ligands for metal complex catalysts for asym.
reactions)

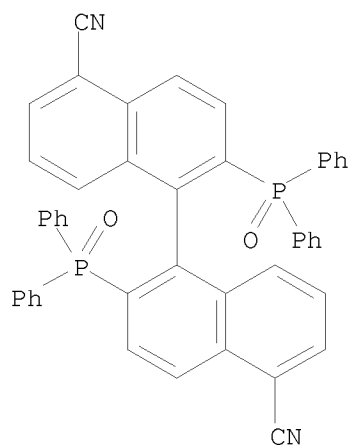
RN 681244-37-1 CAPLUS

CN Phosphine oxide, 1,1'-[(1R)-5,5'-dibromo[1,1'-binaphthalene]-2,2'-
diyl]bis[1,1-diphenyl- (CA INDEX NAME)



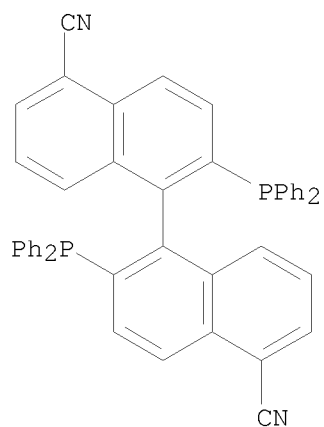
RN 681244-41-7 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphinyl)-,
(1R)- (9CI) (CA INDEX NAME)



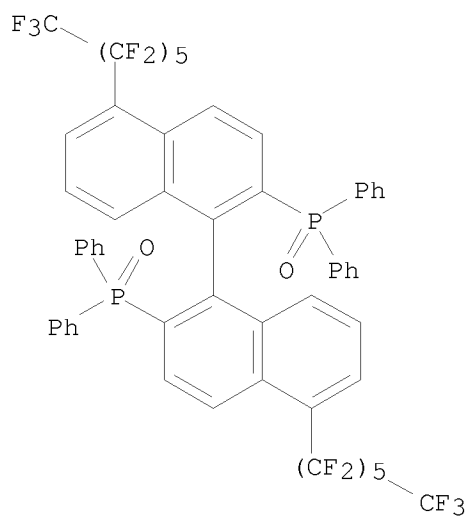
RN 681244-45-1 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-,
(1R)- (CA INDEX NAME)



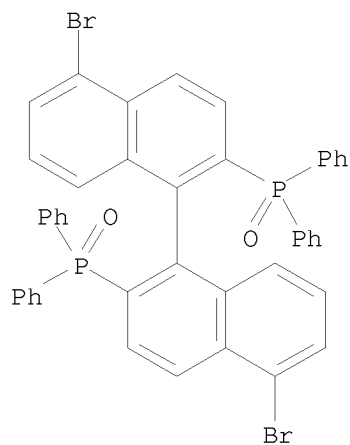
RN 701935-19-5 CAPLUS

CN Phosphine oxide, [(1R)-5,5'-bis(tridecafluorohexyl)[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



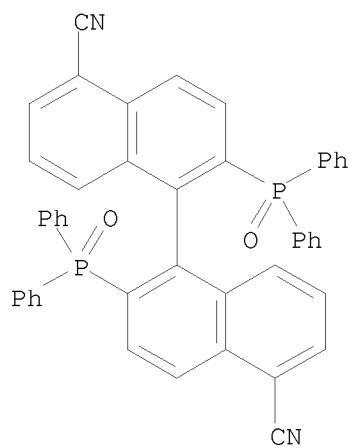
RN 709640-79-9 CAPLUS

CN Phosphine oxide, [(1S)-5,5'-dibromo[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



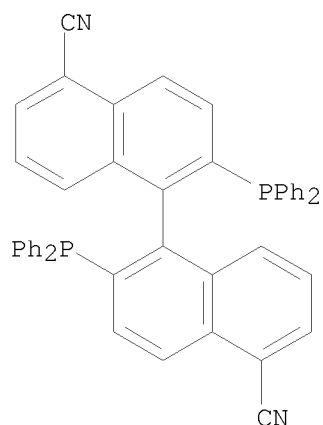
RN 709640-80-2 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphinyl)-,
(1S)- (9CI) (CA INDEX NAME)



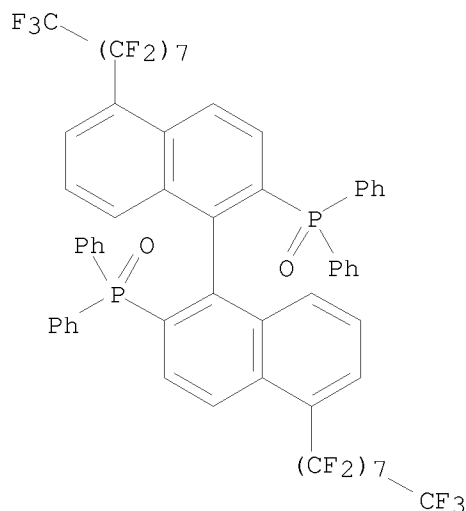
RN 709640-81-3 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-,
(1S)- (9CI) (CA INDEX NAME)



RN 717908-78-6 CAPLUS

CN Phosphine oxide, [(1S)-5,5'-bis(heptadecafluorooctyl)[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 21 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:515337 CAPLUS

DOCUMENT NUMBER: 141:71716

TITLE: Chiral 5,5'-disubstituted binaphthyl diphosphines, processes for their preparation, and their uses as ligands in asymmetric hydrogenation catalysts

INVENTOR(S): Lemaire, Marc; Saluzzo, Christine; Berthod, Mikael

PATENT ASSIGNEE(S): Rhodia Chimie, Fr.; Centre National De La Recherche Scientifique Cnrs

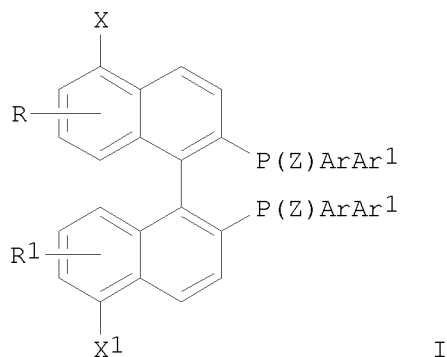
SOURCE: Fr. Demande, 45 pp.
 CODEN: FRXXBL
 DOCUMENT TYPE: Patent
 LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2849036	A1	20040625	FR 2002-16086	20021218
FR 2849036	B1	20050520		
CA 2509911	A1	20040708	CA 2003-2509911	20031217
WO 2004056483	A1	20040708	WO 2003-FR3782	20031217
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003299336	A1	20040714	AU 2003-299336	20031217
CN 1738679	A	20060222	CN 2003-80109027	20031217
EP 1633477	A1	20060315	EP 2003-799617	20031217
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK				
IN 2005CN01258	A	20070622	IN 2005-CN1258	20050615
US 20070010695	A1	20070111	US 2006-539640	20060921
IN 2007CN01851	A	20071116	IN 2007-CN1851	20070501
IN 2007CN01852	A	20071116	IN 2007-CN1852	20070501
PRIORITY APPLN. INFO.:			FR 2002-16086	A 20021218
			FR 2003-4392	A 20030409
			FR 2003-5255	A 20030429
			WO 2003-FR3782	W 20031217
			IN 2005-CN1258	A3 20050615

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): CASREACT 141:71716; MARPAT 141:71716

GI



AB Racemic and optically active diphosphines I [Z = lone pair; R, R¹ = H, C1-6 alkyl, C1-6 alkoxy; Ar, Ar¹ = alkyl, alkenyl, cycloalkyl, aryl, aralkyl, preferably Ph; X, X¹ = (un)substituted alkyl, alkenyl, alkynyl, cycloalkyl, aryl, aralkyl, Br, Cl, iodo, OH, CN, CH₂NH₂, CO₂H or esters, CH₂OH, NHNH₂, N₃, Mg, Li, etc.] and bis(phosphine oxide)s I [Z = O; same R, R¹, Ar, Ar¹; X, X¹ = Cl, Br, iodo] useful, in their optically active form, as ligands for ruthenium, rhodium or iridium catalysts in asym. organic synthesis and in particular for enantioselective hydrogenation of C:C or C:O double bonds, are claimed, as are processes for preparation of I. In an example, treating 0.0235 mmol (S)- or (R)-I (Z = lone pair; R = R¹ = H; Ar = Ar¹ = Ph; X = X¹ = CH₂NH₂; preparation given) in 1 mL CH₂Cl₂ with 0.0235 mmol bis(2-methylallyl)(1,5-cyclooctadiene)ruthenium for 30 min, followed by evaporation of solvent and addition of MeOH or EtOH solvent and Me or Et acetoacetate substrate with a substrate-to-catalyst ratio of 1000:1 and hydrogenation at 40 bar H₂ at 50° for 15 h gave 100% conversions to the corresponding alc. with >99% ee, where the configuration of the alc. product depended on the chirality of I used.

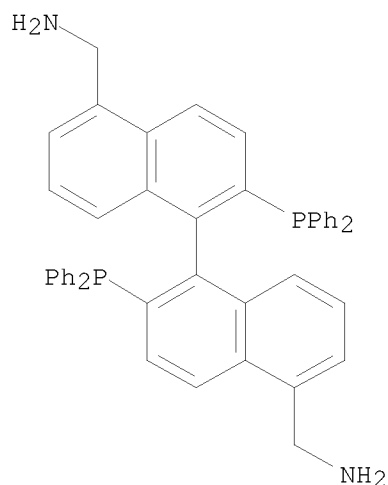
IT 681244-51-9P 709640-82-4P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(preparation of chiral binaphthyl diphosphines, and their uses as ligands in asym. hydrogenation catalysts)

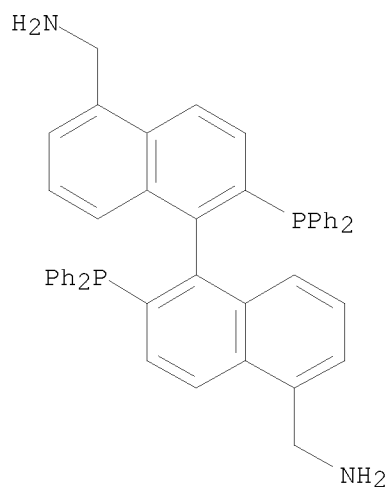
RN 681244-51-9 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-, (1R)- (CA INDEX NAME)



RN 709640-82-4 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-,
(1S)- (9CI) (CA INDEX NAME)



IT 681244-37-1P 681244-41-7P 681244-45-1P

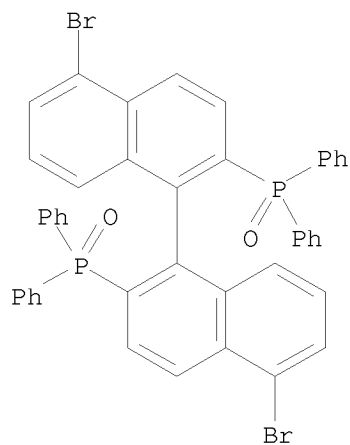
709640-79-9P 709640-80-2P 709640-81-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)

(preparation of chiral binaphthyl diphosphines, and their uses as ligands in
asym. hydrogenation catalysts)

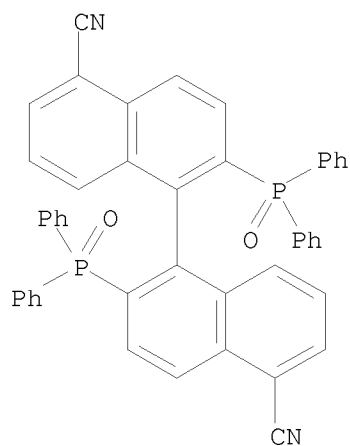
RN 681244-37-1 CAPLUS

CN Phosphine oxide, 1,1'-[(1R)-5,5'-dibromo[1,1'-binaphthalene]-2,2'-
diyl]bis[1,1-diphenyl- (CA INDEX NAME)



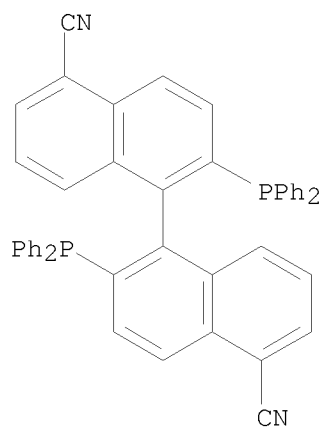
RN 681244-41-7 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphinyl)-,
(1R)- (9CI) (CA INDEX NAME)



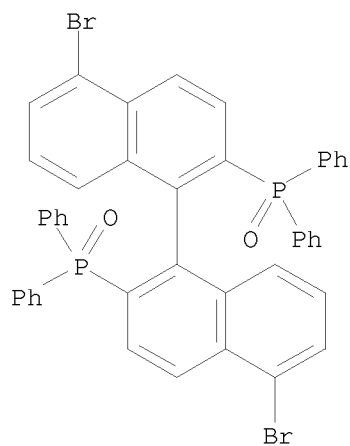
RN 681244-45-1 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-,
(1R)- (CA INDEX NAME)



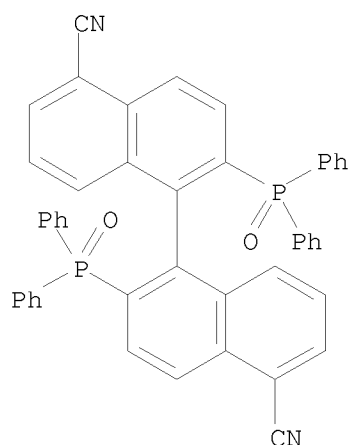
RN 709640-79-9 CAPLUS

CN Phosphine oxide, [(1S)-5,5'-dibromo[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)

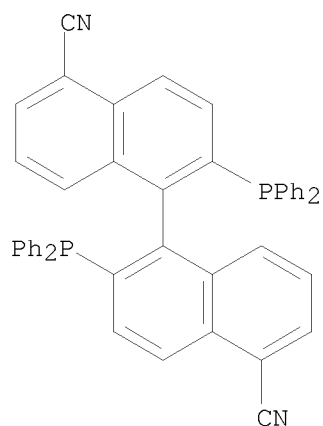


RN 709640-80-2 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphinyloxy)-, (1S)- (9CI) (CA INDEX NAME)



RN 709640-81-3 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-,
(1S)- (9CI) (CA INDEX NAME)

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(2 CITINGS)
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 22 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:270947 CAPLUS

DOCUMENT NUMBER: 141:38419

TITLE: New perfluoroalkylated BINAP usable as a ligand in
homogeneous and supercritical carbon dioxide
asymmetric hydrogenationAUTHOR(S): Berthod, Mikael; Mignani, Gerard; Lemaire, Marc
CORPORATE SOURCE: Laboratoire de Catalyse et de Synthese Organique,
UCBL, UMR 5181, Villeurbanne, Fr.SOURCE: Tetrahedron: Asymmetry (2004), 15(7), 1121-1126
CODEN: TASYE3; ISSN: 0957-4166

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 141:38419

AB New perfluoroalkylated BINAP ligands were synthesized in four steps from enantiomerically pure BINAP. For example, (+)-(1R)-[5,5'-bis(perfluorohexyl)-1,1'-binaphthalene]-2,2'-diylbis[diphenylphosphine] (I) was prepared starting from (1R)-[1,1'-binaphthalene]-2,2'-diylbis[diphenylphosphine] by bromination and subsequent fluoroalkylation. The [(1,2,5,6- η)-1,5-cyclooctadiene]bis[(1,2,3- η)-2-methyl-2-propenyl]ruthenium-catalyzed hydrogenation of (2Z)-2-(acetylamino)-2-butenic acid Me ester in the presence of I as chiral ligand using supercrit. carbon dioxide as solvent and trifluorotoluene as co-solvent gave 2-(acetylamino)butanoic acid Me ester in 74% enantiomeric excess. The new ligands were used in the homogeneous asym. hydrogenation of Et acetoacetate in ethanol and in the asym. hydrogenation of Me 2-acetamidoacrylate in supercrit. carbon dioxide. In supercrit. media, the addition and nature of a co-solvent have been discussed. Very good conversion and selectivity were obtained in each case.

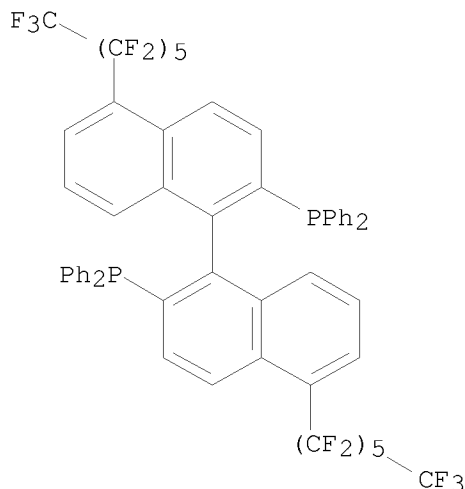
IT 701935-24-2P 701935-25-3P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(preparation of chiral [bis(perfluorohexyl)binaphthalene]diylbis[diphenylphosphine] as ligands for ruthenium-catalyzed stereoselective hydrogenation)

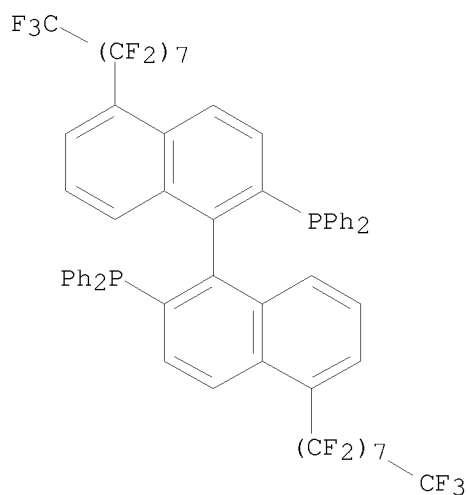
RN 701935-24-2 CAPLUS

CN Phosphine, [(1R)-5,5'-bis(tridecafluorohexyl)[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)

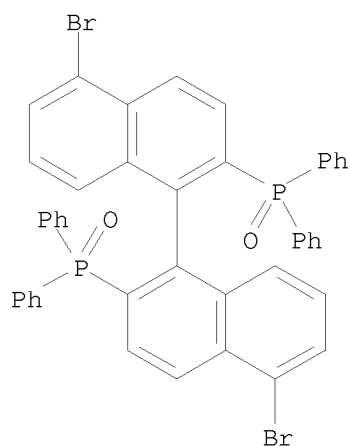


RN 701935-25-3 CAPLUS

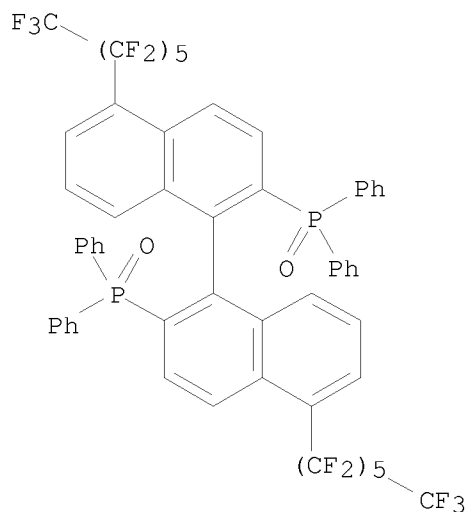
CN Phosphine, 1,1'-[(1R)-5,5'-bis(1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluorooctyl)[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



IT 681244-37-1P 701935-19-5P 701935-21-9P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation of chiral [bis(perfluorohexyl)binaphthalene]diylbis[diphenylphosphine] as ligands for ruthenium-catalyzed stereoselective
 hydrogenation)
 RN 681244-37-1 CAPLUS
 CN Phosphine oxide, 1,1'-[(1R)-5,5'-dibromo[1,1'-binaphthalene]-2,2'-
 diyl]bis[1,1-diphenyl- (CA INDEX NAME)

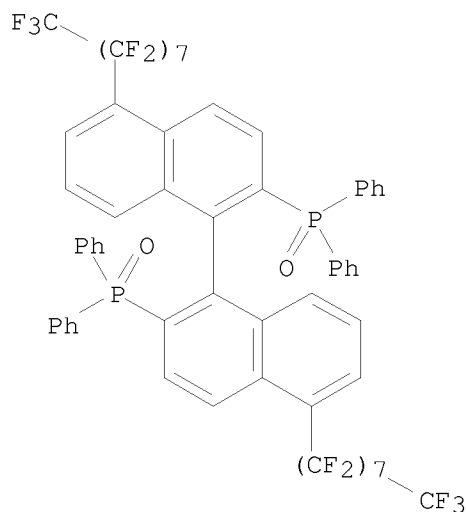


RN 701935-19-5 CAPLUS
 CN Phosphine oxide, [(1R)-5,5'-bis(tridecafluorohexyl)[1,1'-binaphthalene]-
 2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



RN 701935-21-9 CAPLUS

CN Phosphine oxide, [(1R)-5,5'-bis(heptafluorooctyl)[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 24 THERE ARE 24 CAPLUS RECORDS THAT CITE THIS RECORD (24 CITINGS)

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

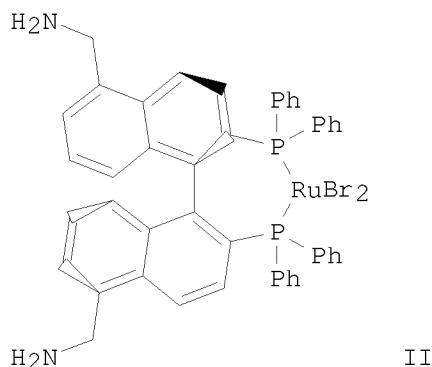
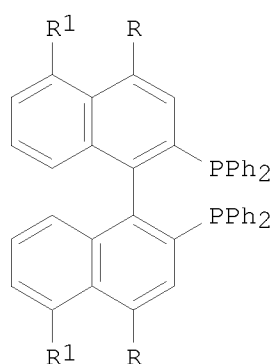
L3 ANSWER 23 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:106245 CAPLUS

DOCUMENT NUMBER: 140:357425

TITLE: 4,4' and 5,5'-DiamBINAP as a hydrosoluble chiral ligand: syntheses and use in Ru(II) asymmetric biphasic catalytic hydrogenation

AUTHOR(S): Berthod, Mikael; Saluzzo, Christine; Mignani, Gerard; Lemaire, Marc
 CORPORATE SOURCE: Laboratoire de Catalyse et de Synthese Organique, UCBL, UMR 5181, Villeurbanne, 69622, Fr.
 SOURCE: Tetrahedron: Asymmetry (2004), 15(4), 639-645
 CODEN: TASYE3; ISSN: 0957-4166
 PUBLISHER: Elsevier Science B.V.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 140:357425
 GI



AB 4,4' And 5,5'-di(aminomethyl)BINAP (S)-I (R = H₂NCH₂; R₁ = H) and (R)-I (R = H; R₁ = H₂NCH₂) are prepared in five steps from enantiomerically pure BINAP; derived ruthenium (II) catalysts such as II•2HBr are found to be water-soluble and enantioselective catalysts for the hydrogenation of β-keto esters in biphasic water-substrate solns. to give nonracemic β-hydroxy esters in 100% conversion and 96-99% ee. Oxidation of BINAP enantiomers with hydrogen peroxide yields the bis(phosphine oxide) of BINAP. Regioselective bromination of BINAP P,P'-dioxide with bromine and pyridine in methylene chloride yields the 4,4'-dibromide in 76% yield; bromination of BINAP P,P'-dioxide with bromine and iron in 1,2-dichloroethane at 80° yields the 5,5'-dibromide in 81% yield. Coupling of the dibromides with copper (I) cyanide in DMF yields the dinitriles; using the reagent combination of phenylsilane and trichlorosilane, the phosphine oxides are reduced to the phosphines in quant. yield. Reduction of the nitriles with lithium aluminum hydride yields the products I. Treatment of I with aqueous hydrobromic acid followed by addition of the ruthenium complex Ru(μ₄-1,5-COD)(μ₃-CH₂CMe:CH₂)₂ and hydrobromic acid in acetone yields water-soluble ruthenium catalysts such as II in quant. yield. Hydrogenation of Me and Et acetoacetate and Me benzoylacetate with catalysts such as II in methanol, ethanol, or water (in which the substrate forms a second phase) at 40 bar hydrogen pressure and 50° for 15 h yields the corresponding β-hydroxy esters in 100% conversion and 96-99% ee.

IT 681244-37-1P 681244-41-7P 681244-45-1P
 681244-51-9P

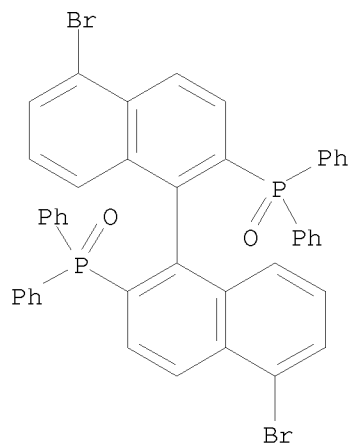
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)

(preparation of nonracemic di(aminomethyl)BINAP ligands using regioselective bromination and chemoselective phosphine oxide reduction as key steps and the use of the ligands in enantioselective hydrogenation of β -keto esters)

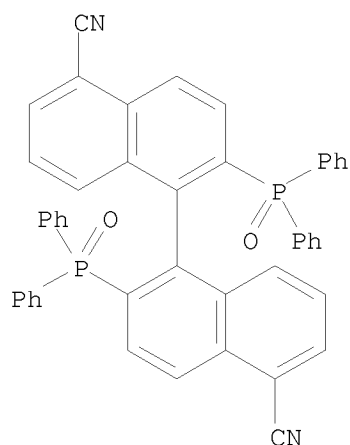
RN 681244-37-1 CAPLUS

CN Phosphine oxide, 1,1'-[(1R)-5,5'-dibromo[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



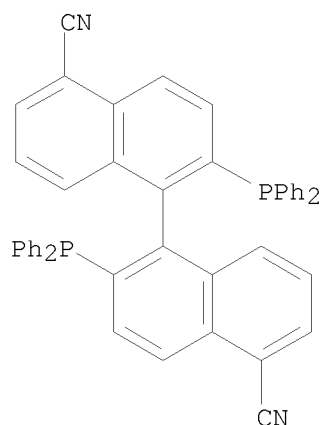
RN 681244-41-7 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphinyl)-, (1R)- (9CI) (CA INDEX NAME)

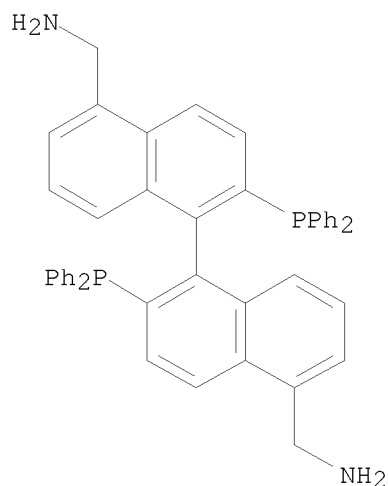


RN 681244-45-1 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-, (1R)- (CA INDEX NAME)



RN 681244-51-9 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-,
(1R)- (CA INDEX NAME)

OS.CITING REF COUNT: 31 THERE ARE 31 CAPLUS RECORDS THAT CITE THIS
RECORD (31 CITINGS)
REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 24 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2003:148623 CAPLUS

DOCUMENT NUMBER: 139:133296

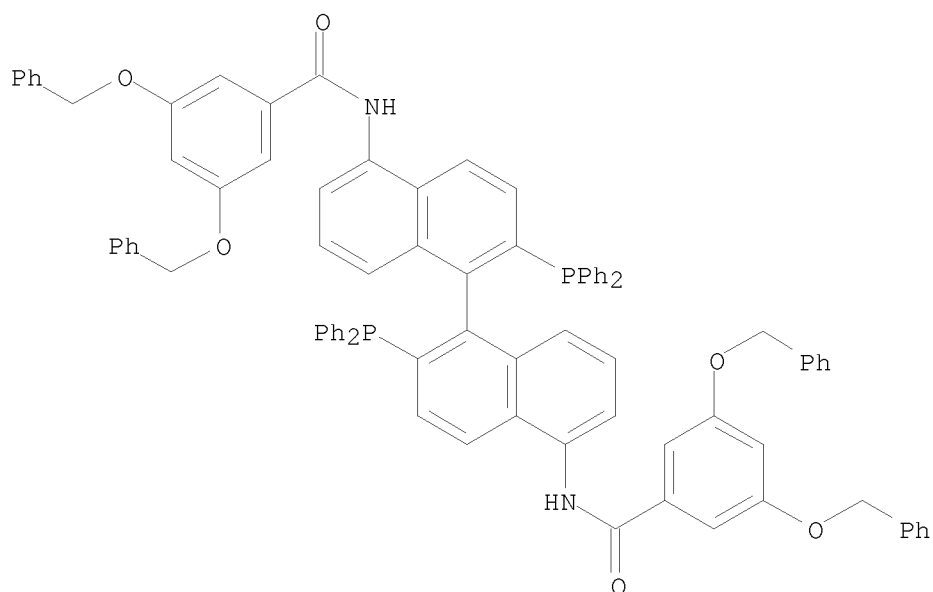
TITLE: Dendritic BINAP based system for asymmetric
hydrogenation of simple aryl ketonesAUTHOR(S): Deng, Guo-Jun; Fan, Qing-Hua; Chen, Xiao-Min; Liu,
Guo-HuaCORPORATE SOURCE: Institute of Chemistry, Center for Molecular Science,
The Chinese Academy of Sciences, Beijing, 100080,
Peop. Rep. China

SOURCE: Journal of Molecular Catalysis A: Chemical (2003),
193(1-2), 21-25
CODEN: JMCCF2; ISSN: 1381-1169
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 139:133296

AB Highly effective and recyclable dendritic BINAP-Ru catalysts have been developed for asym. hydrogenation of simple aryl ketones. Dendritic ligands included N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis(phenylmethoxy)benzamide], N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis[[3,5-bis(phenylmethoxy)phenyl]methoxy]benzamide], and N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis[[3,5-bis[[3,5-bis(phenylmethoxy)phenyl]methoxy]phenyl]methoxy]benzamide]. Catalyst systems also included N,N'-[(1R)-2,2'-Bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[benzamide]/(1R,1R)-1,2-diphenyl-1,2-ethanediamine and (R)-BINAP/(1R,1R)-1,2-diphenyl-1,2-ethanediamine and (R)-BINAP/(1S,1R)-1,2-diphenyl-1,2-ethanediamine. A series of dendritic BINAP-Ru/chiral diamine catalysts were developed for asym. hydrogenation of various simple aryl ketones. The resulting catalytic system showed very attractive due to very good catalytic activity and enantioselectivity as well as facile catalyst recycling. In the case of 1-acetonaphthone and 2-methylacetophenone, interesting e.e. value up to 95% was observed which are comparable to the enantioselectivity reported by Noyori under similar conditions and higher than that of the heterogeneous poly(BINAP)-Ru catalyst reported by Pu and co-workers [Tetrahedron Lett. 41 (2000) 1681].

IT 286015-10-9, N,N'-[(1R)-2,2'-Bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis(phenylmethoxy)benzamide]
286015-11-0, N,N'-[(1R)-2,2'-Bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis[[3,5-bis(phenylmethoxy)phenyl]methoxy]benzamide] 566932-78-3,
N,N'-[(1R)-2,2'-Bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[benzamide]
RL: CAT (Catalyst use); USES (Uses)
(dendritic BINAP based system for asym. hydrogenation of simple aryl ketones)

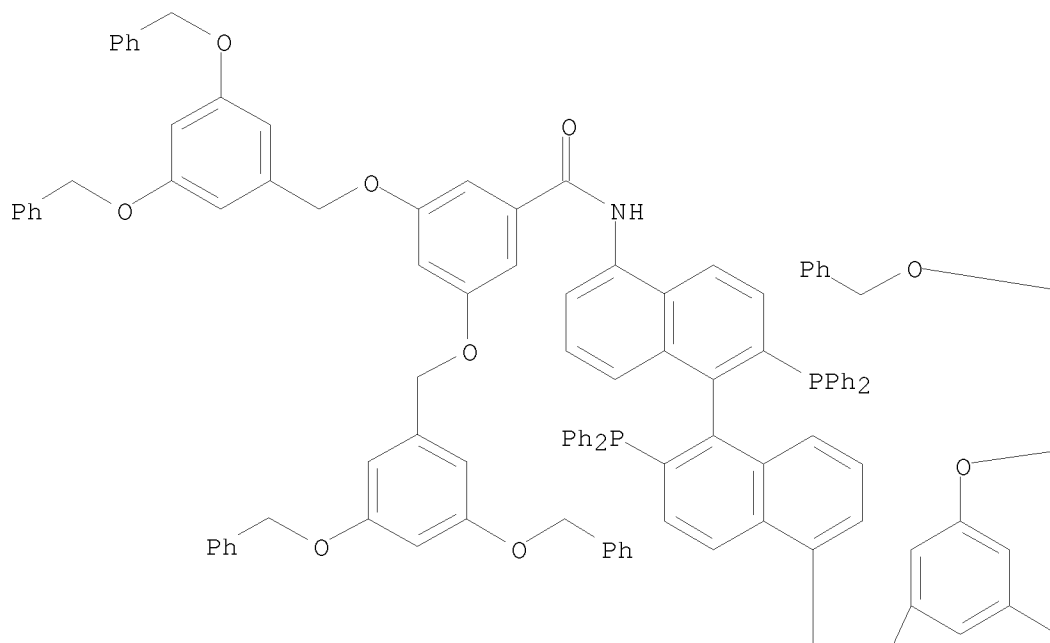
RN 286015-10-9 CAPLUS
CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis(phenylmethoxy)- (9CI) (CA INDEX NAME)



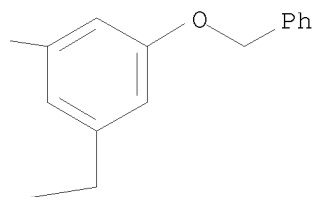
RN 286015-11-0 CAPLUS

CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis[[3,5-bis(phenylmethoxy)phenyl]methoxy]- (9CI) (CA INDEX NAME)

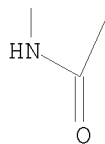
PAGE 1-A



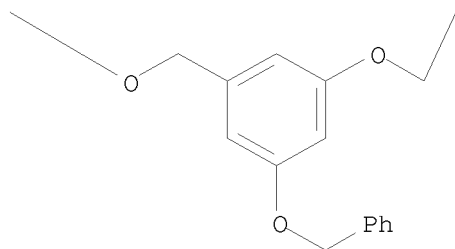
PAGE 1-B



PAGE 2-A

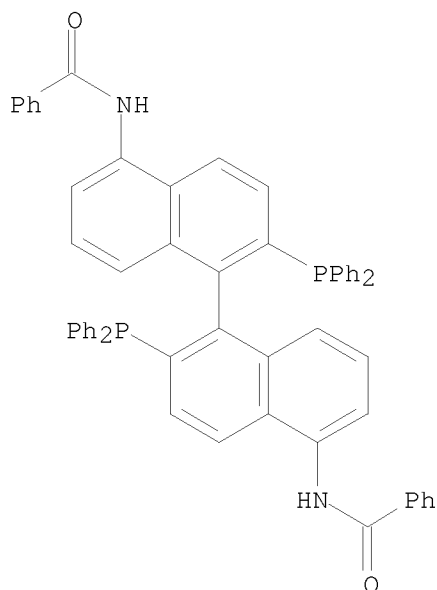


PAGE 2-B



RN 566932-78-3 CAPLUS

CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 28 THERE ARE 28 CAPLUS RECORDS THAT CITE THIS
RECORD (28 CITINGS)
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 25 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2002:540932 CAPLUS

DOCUMENT NUMBER: 137:310975

TITLE: Assembling behavior of BINAP derivative

AUTHOR(S): Wu, Peng; Deng, Guojun; Fan, Qinghua; Zeng, Qingdao;
Wang, Chen; Wan, Lijun; Bai, Chunli

CORPORATE SOURCE: Center for Molecular Science, Institute of Chemistry,
The Chinese Academy of Sciences, Beijing, 100080,
Peop. Rep. China

SOURCE: Chemistry Letters (2002), (7), 706-707

CODEN: CMLTAG; ISSN: 0366-7022

PUBLISHER: Chemical Society of Japan

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 137:310975

AB Ordered assembly of dendritic BINAP ligand was studied by using scanning
tunneling microscopy (STM). Probably the mols. are arranged in a dimeric
manner in the assembly.

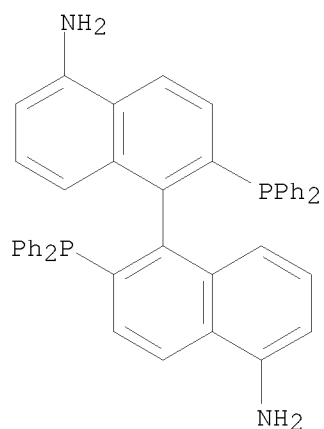
IT 244260-43-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(condensation with tris(decyloxy)benzoic acid to give dendritic BINAP
ligand)

RN 244260-43-3 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
(CA INDEX NAME)



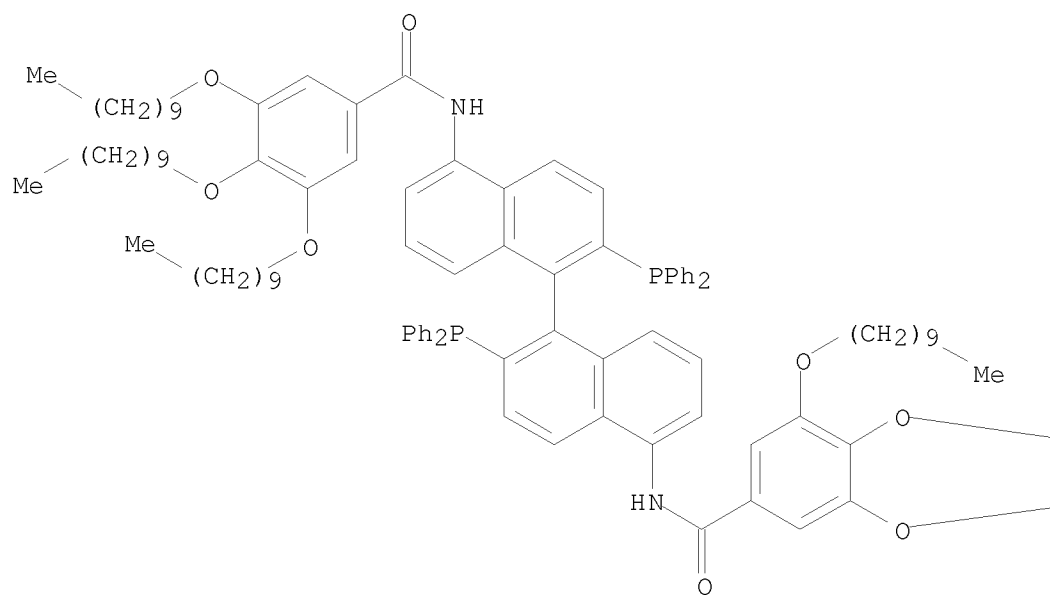
IT 471863-91-9P

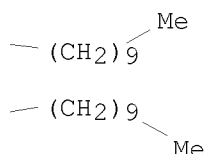
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and structural anal. by scanning tunneling microscopy)

RN 471863-91-9 CAPLUS

CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,4,5-tris(decyloxy)- (9CI) (CA INDEX NAME)

PAGE 1-A





REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 26 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2002:517295 CAPLUS

DOCUMENT NUMBER: 138:89317

TITLE: A novel system consisting of easily recyclable dendritic Ru-BINAP catalyst for asymmetric hydrogenation

AUTHOR(S): Deng, Guo-Jun; Fan, Qing-Hua; Chen, Xiao-Min; Liu, Dong-Sheng; Chan, Albert S. C.

CORPORATE SOURCE: Center for Molecular Science, Institute of Chemistry, The Chinese Academy of Sciences, Beijing, 100080, UK

SOURCE: Chemical Communications (Cambridge, United Kingdom) (2002), (15), 1570-1571

CODEN: CHCOFS; ISSN: 1359-7345

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 138:89317

AB Dendritic Ru-BINAP catalysts functionalized with alkyl chain at the periphery together with organic binary solvent system that exhibited phase separation induced by addition of a little water have been employed for asym. hydrogenation, leading to high catalytic activity and enantioselectivity as well as facile catalyst recycling.

IT 244260-43-3

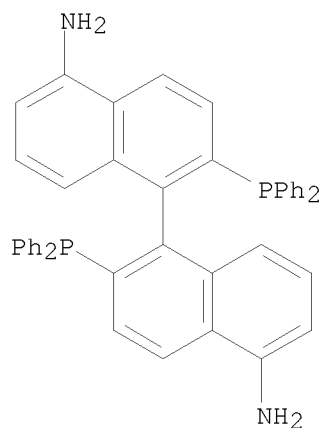
RL: RCT (Reactant); RACT (Reactant or reagent)

(condensation reaction with dendritic oligomeric polyethers; asym.

hydrogenation of aryl acrylic acids in presence of recyclable dendritic ruthenium-BINAP catalyst systems)

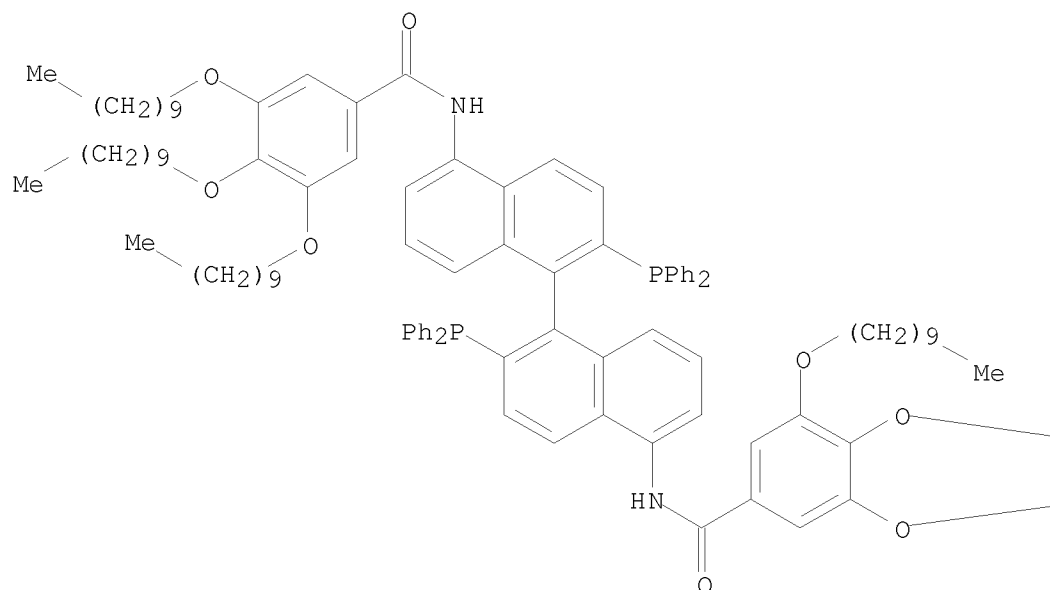
RN 244260-43-3 CAPLUS

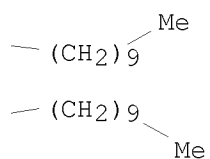
CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)- (CA INDEX NAME)



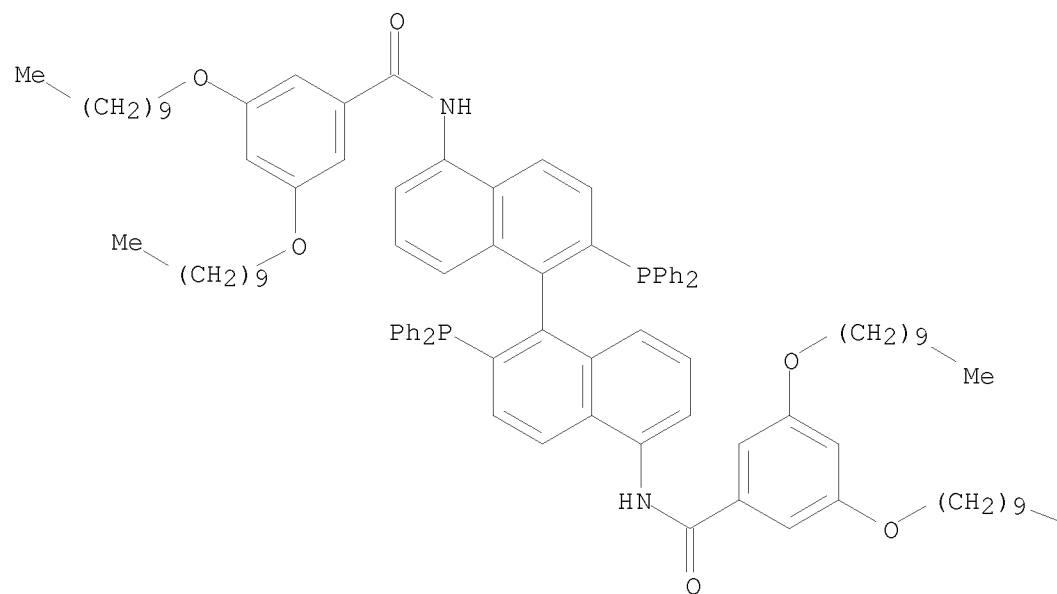
IT 471863-91-9P 483985-21-3P 483985-23-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (ligand, complexation with ruthenium compound; preparation of recyclable
 dendritic ruthenium-BINAP catalyst systems and their catalytic activity
 in asym. hydrogenation of aryl acrylic acids)
 RN 471863-91-9 CAPLUS
 CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-
 diyl]bis[3,4,5-tris(decyloxy)- (9CI) (CA INDEX NAME)

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RN 483985-21-3 CAPLUS
CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis(decyloxy)- (9CI) (CA INDEX NAME)



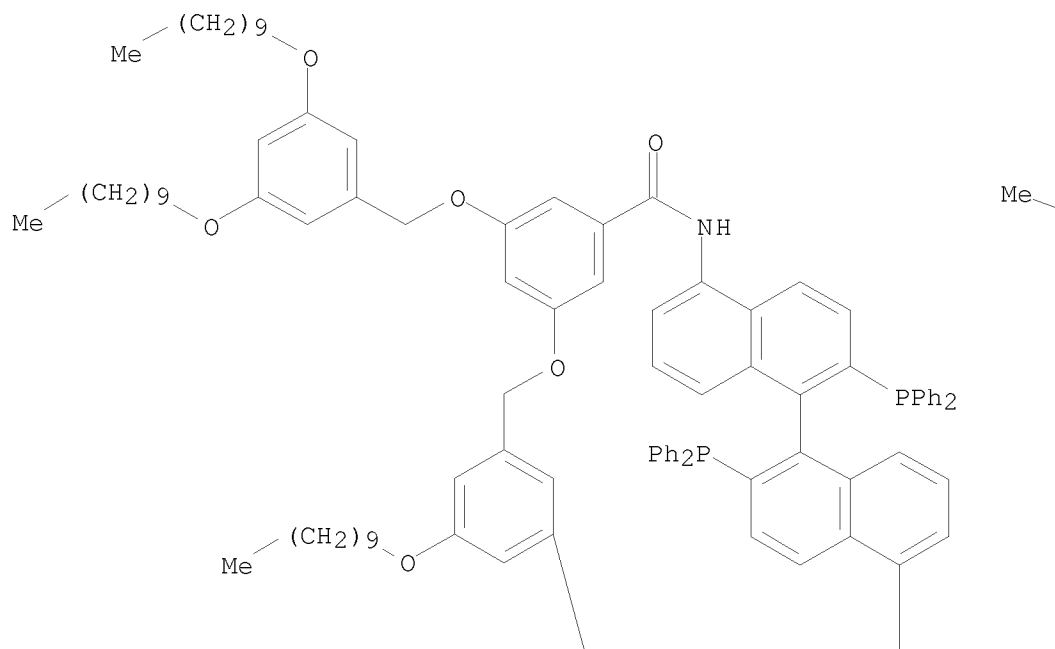
PAGE 1-B

Me

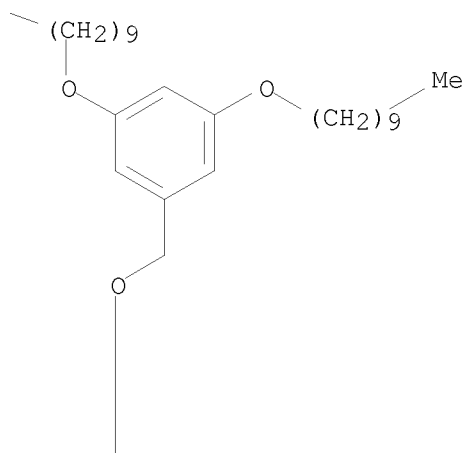
RN 483985-23-5 CAPLUS

CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis[[3,5-bis(decyloxy)phenyl]methoxy]-(9CI) (CA INDEX NAME)

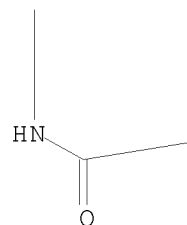
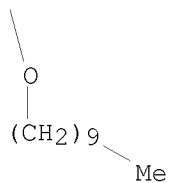
PAGE 1-A



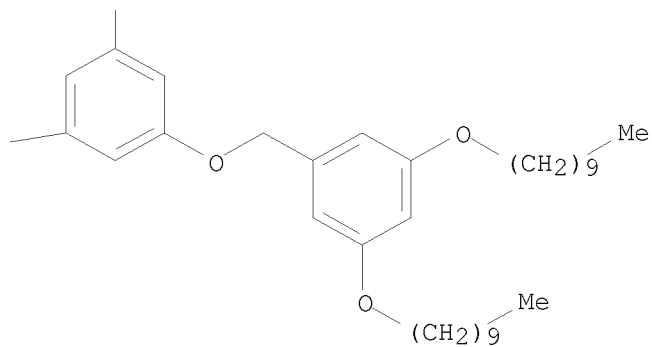
PAGE 1-B



PAGE 2-A



PAGE 2-B



IT 471863-91-9D, complexes with ruthenium 483985-21-3D,

complexes with ruthenium 483985-23-5D, complexes with
ruthenium

RL: CAT (Catalyst use); USES (Uses)

(preparation and partition coefficient of recyclable dendritic

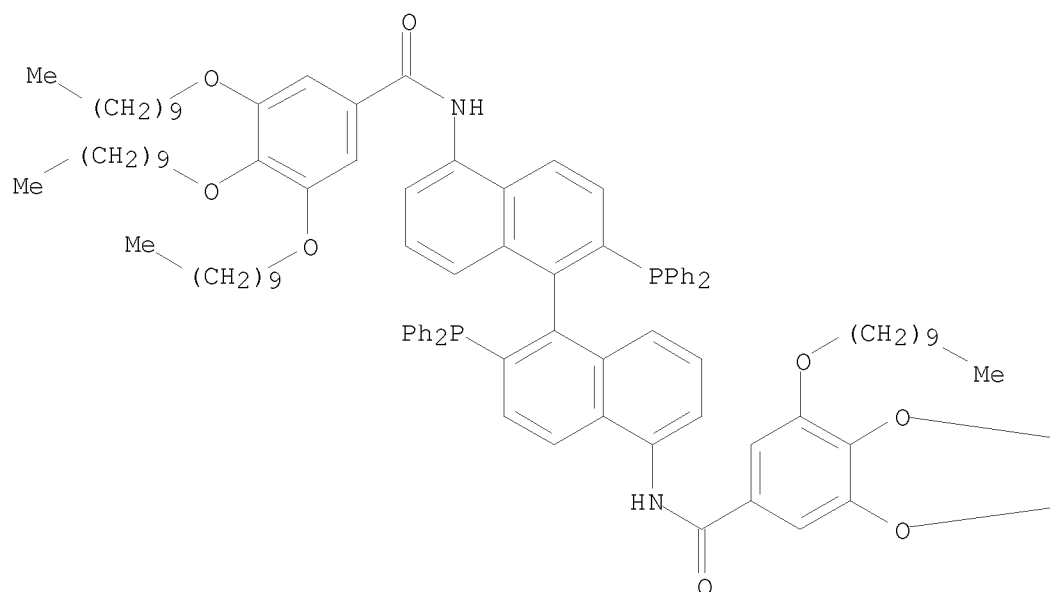
ruthenium-BINAP

catalyst systems and their catalytic activity in asym. hydrogenation of
aryl acrylic acids)

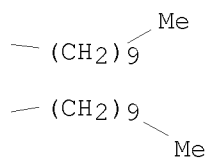
RN 471863-91-9 CAPLUS

CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-
diyl]bis[3,4,5-tris(decyloxy)- (9CI) (CA INDEX NAME)

PAGE 1-A



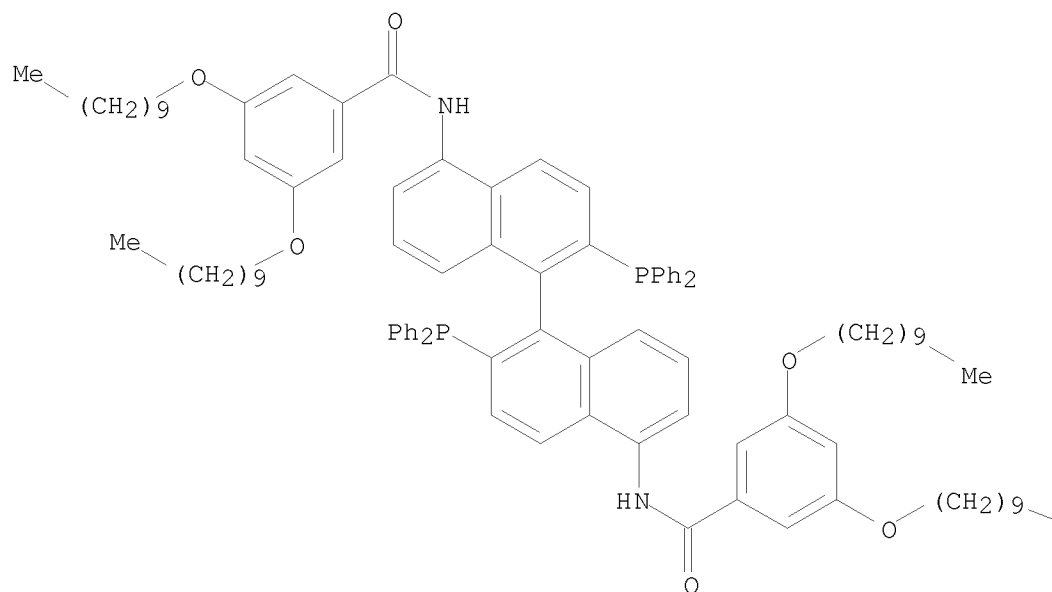
PAGE 1-B



RN 483985-21-3 CAPLUS

CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis(decyloxy)- (9CI) (CA INDEX NAME)

PAGE 1-A

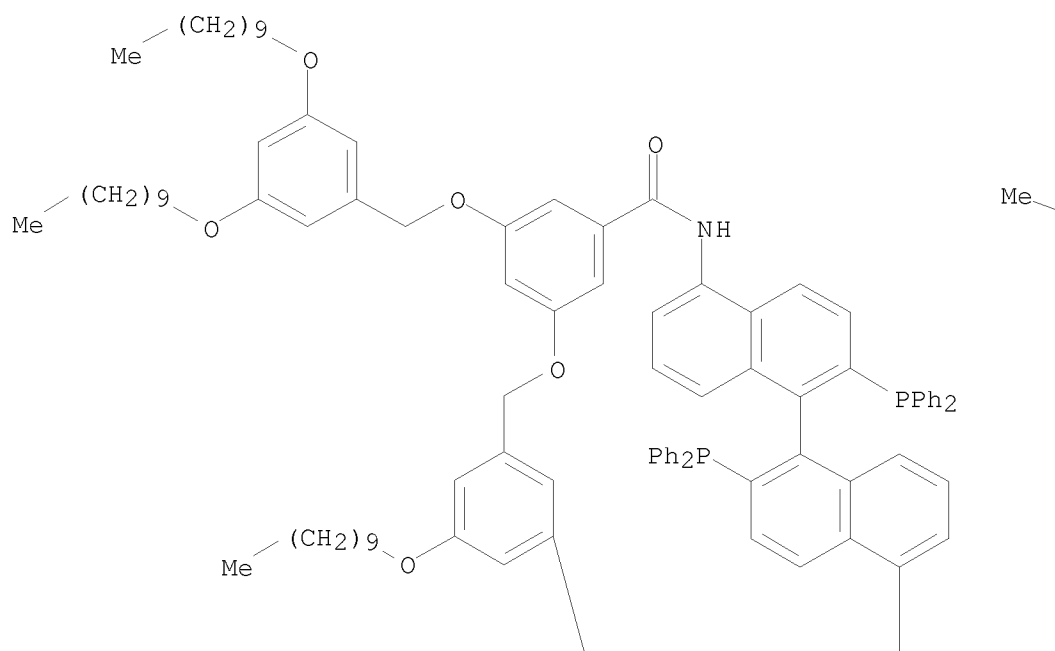


PAGE 1-B

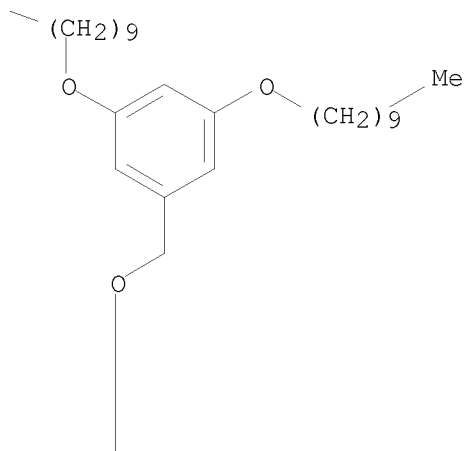
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RN 483985-23-5 CAPLUS
CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis[[3,5-bis(decyloxy)phenyl]methoxy]- (9CI) (CA INDEX NAME)

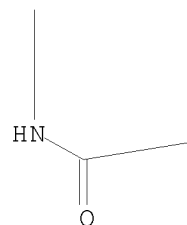
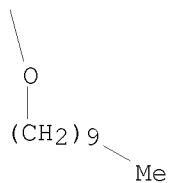
PAGE 1-A



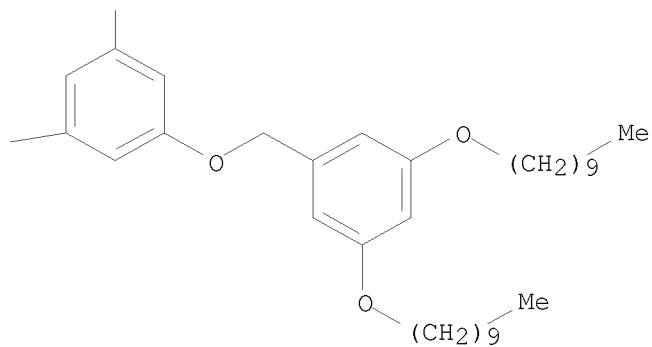
PAGE 1-B



PAGE 2-A



PAGE 2-B



OS.CITING REF COUNT: 56 THERE ARE 56 CAPLUS RECORDS THAT CITE THIS

RECORD (57 CITINGS)
REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 27 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2001:878892 CAPLUS

DOCUMENT NUMBER: 136:296494

TITLE: New soluble bifunctional polymeric chiral ligands for
enantioselectively catalytic reactions

AUTHOR(S): Fan, Qing-Hua; Liu, Guo-Hua; Deng, Guo-Jun; Chen,
Xiao-Min; Chan, Albert S. C.

CORPORATE SOURCE: Center for Molecular Science, LMRSS, The Chinese
Academy of Sciences, Institute of Chemistry, Beijing,
100080, Peop. Rep. China

SOURCE: Tetrahedron Letters (2001), 42(51), 9047-9050

CODEN: TELEAY; ISSN: 0040-4039

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two new soluble bifunctional polymeric ligands (R,R)-4 and (R,R)-5 have been
prepared via the direct condensation reaction of
(R)-3,3'-diformyl-1,1'-bi-2-naphthol (R)-1 with (R)-5,5'-diamino BINAP
(R)-2 and with (R)-5,5'-diamino BINAPO (R)-3, resp. The different types
of catalytic centers, BINOL and BINAP or BINAPO, were alternatively
organized in a regular chiral polymer chain. Both polymeric ligands were
found to be effective in the addition of diethylzinc to benzaldehyde either
in the presence or in the absence of Ti(OPri)₄ with different
enantioselectivities. (R,R)-4/Ti(IV) catalyst, which showed similar
efficiency to the parent catalyst BINOL/Ti(IV), was more enantioselective
than (R,R)-5/Ti(IV). (R,R)-4 was also found to be highly effective in the
Ru(II)-catalyzed asym. hydrogenation of 2-arylacrylic acids. The use of
the co-polymer catalyst rather than a mixture of monomer catalysts not only
simplified the recycling of the catalyst, but also improved the
enantioselectivity and/or the activity in some cases.

IT 406933-98-0P 406933-99-1P 406935-39-5P

406936-18-3P

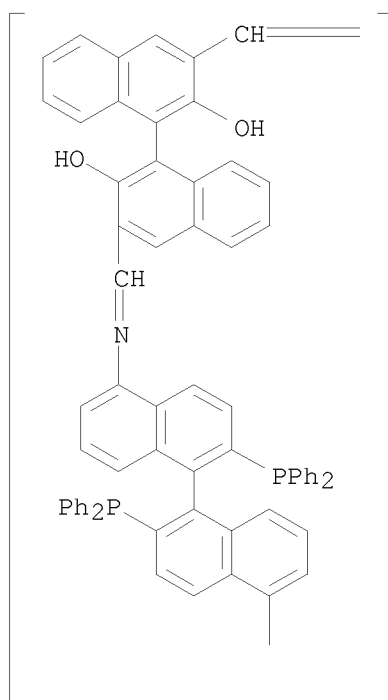
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
USES (Uses)

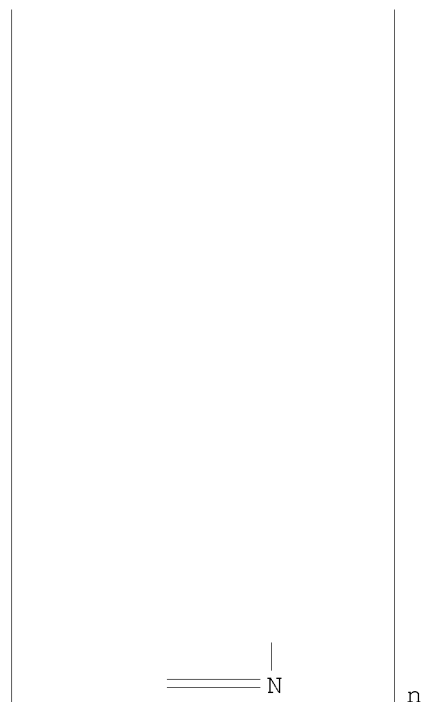
(ligand; preparation of new soluble bifunctional polymeric chiral ligands
for
enantioselectively catalytic reactions)

RN 406933-98-0 CAPLUS

CN Poly[nitrilo[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-
diyl]nitrilomethylidyne[(1R)-2,2'-dihydroxy[1,1'-binaphthalene]-3,3'-
diyl]methylidyne] (9CI) (CA INDEX NAME)

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RN 406933-99-1 CAPLUS
CN Poly[nitrilo[(1R)-2,2'-bis(diphenylphosphinyl)[1,1'-binaphthalene]-5,5'-
diyl]nitrilomethylidyne[(1R)-2,2'-dihydroxy[1,1'-binaphthalene]-3,3'-
diyl]methylidyne] (9CI) (CA INDEX NAME)

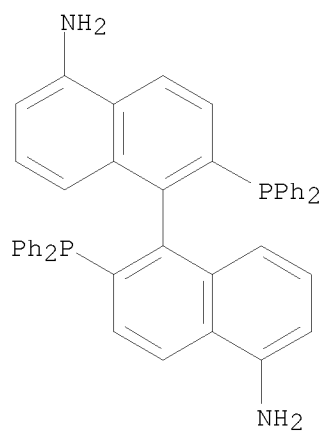
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

RN 406935-39-5 CAPLUS
CN [1,1'-Binaphthalene]-3,3'-dicarboxaldehyde, 2,2'-dihydroxy-, (1R)-,
polymer with (1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-
diamine (9CI) (CA INDEX NAME)

CM 1

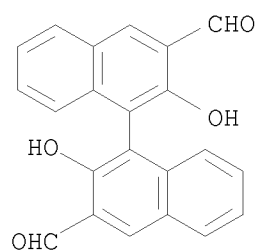
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CMF C44 H34 N2 P2



CM 2

CRN 121314-69-0

CMF C22 H14 O4



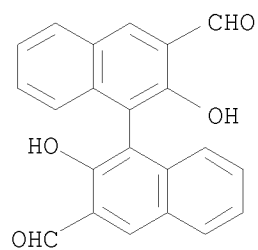
RN 406936-18-3 CAPLUS

CN [1,1'-Binaphthalene]-3,3'-dicarboxaldehyde, 2,2'-dihydroxy-, (1R)-,
polymer with (+)-2,2'-bis(diphenylphosphinyl) [1,1'-binaphthalene]-5,5'-
diamine (9CI) (CA INDEX NAME)

CM 1

CRN 121314-69-0

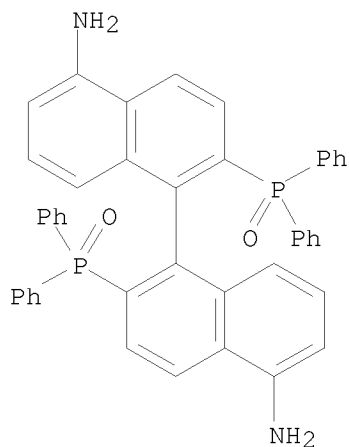
CMF C22 H14 O4



CM 2

CRN 114317-09-8

CMF C44 H34 N2 O2 P2



OS.CITING REF COUNT: 27 THERE ARE 27 CAPLUS RECORDS THAT CITE THIS RECORD (28 CITINGS)
REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 28 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2001:457144 CAPLUS

DOCUMENT NUMBER: 135:273246

TITLE: Preparation and use of MeO-PEG-supported chiral diphosphine ligands: soluble polymer-supported catalysts for asymmetric hydrogenation

AUTHOR(S): Fan, Q.-H.; Deng, G.-J.; Lin, C.-C.; Chan, A. S. C.
CORPORATE SOURCE: Institute of Chemistry, Center for Molecular Science, LMRSS, The Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. ChinaSOURCE: Tetrahedron: Asymmetry (2001), 12(8), 1241-1247
CODEN: TASYE3; ISSN: 0957-4166

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two new chiral MeO-PEG-supported (R)-BINAP and (3R,4R)-Pyrphos ligands were synthesized and employed in the Ru(II)- and Rh(I)-catalyzed asym. hydrogenation of 2-(6-methoxy-2-naphthyl)propenoic acid (I) and prochiral enamides. These new soluble polymeric catalysts exhibited high activity and enantioselectivity. Enantiomeric excesses (e.e.s) in the ranges 90-96% and 86-96% were achieved in the hydrogenation of I and the enamides, resp. Furthermore, these catalysts could be recovered easily, and the recycled catalysts were shown to maintain their efficiency in subsequent reactions.

IT 363165-72-4DP, ruthenium binaphthyl/p-cymene complexes
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(MeO-PEG-supported chiral diphosphine ligands for soluble
polymer-supported catalysts for asym. hydrogenation)

RN 363165-72-4 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with
(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine and
oxirane, methyl ether, block (9CI) (CA INDEX NAME)

CM 1

CRN 67-56-1

CMF C H4 O

H₃C—OH

CM 2

CRN 363165-71-3

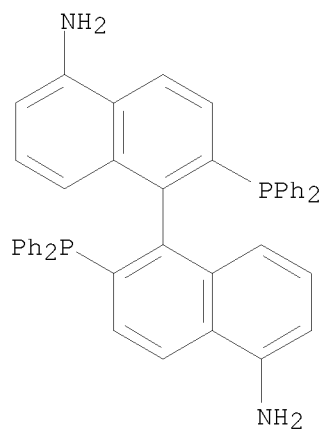
CMF (C44 H34 N2 P2 . C8 H4 C12 O2 . C2 H4 O)x

CCI PMS

CM 3

CRN 244260-43-3

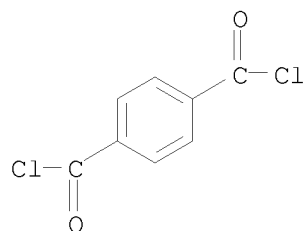
CMF C44 H34 N2 P2



CM 4

CRN 100-20-9

CMF C8 H4 C12 O2



CM 5

CRN 75-21-8

CMF C2 H4 O

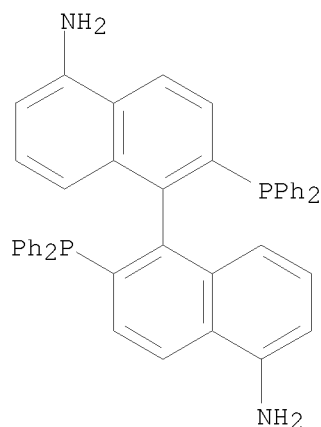


IT 244260-43-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(MeO-PEG-supported chiral diphosphine ligands for soluble
polymer-supported catalysts for asym. hydrogenation)

RN 244260-43-3 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
(CA INDEX NAME)

IT 363165-72-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)(MeO-PEG-supported chiral diphosphine ligands for soluble
polymer-supported catalysts for asym. hydrogenation)

RN 363165-72-4 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with
(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine and
oxirane, methyl ether, block (9CI) (CA INDEX NAME)

CM 1

CRN 67-56-1

CMF C H4 O

 $\text{H}_3\text{C}-\text{OH}$

CM 2

CRN 363165-71-3

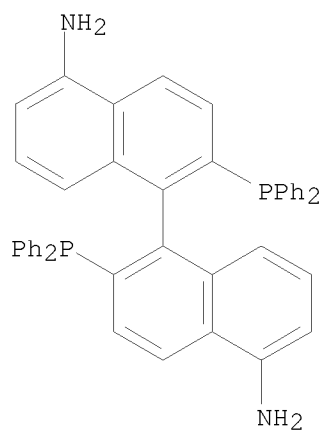
CMF (C44 H34 N2 P2 . C8 H4 Cl2 O2 . C2 H4 O)x

CCI PMS

CM 3

CRN 244260-43-3

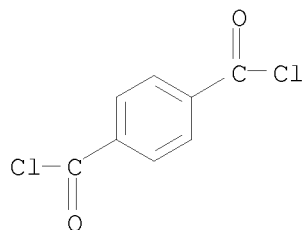
CMF C44 H34 N2 P2



CM 4

CRN 100-20-9

CMF C8 H4 Cl2 O2



CM 5

CRN 75-21-8

CMF C2 H4 O



OS.CITING REF COUNT: 50 THERE ARE 50 CAPLUS RECORDS THAT CITE THIS
RECORD (50 CITINGS)
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 29 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2000:508669 CAPLUS

DOCUMENT NUMBER: 134:4502

TITLE: A highly effective water-soluble polymer-supported
catalyst for the two-phase asymmetric hydrogenation:
preparation and use of a PEG-bound BINAP ligandAUTHOR(S): Fan, Q.-H.; Deng, G.-J.; Chen, X.-M.; Xie, W.-C.;
Jiang, D.-Z.; Liu, D.-S.; Chan, A. S. C.CORPORATE SOURCE: Institute of Chemistry, Center for Molecular Science,
The Chinese Academy of Sciences, Beijing, 100080,
Peop. Rep. ChinaSOURCE: Journal of Molecular Catalysis A: Chemical (2000),
159(1), 37-43

CODEN: JMCCF2; ISSN: 1381-1169

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 134:4502

AB A new type of amphiphilic PEG-bound BINAP ligand was synthesized through
polycondensation of 5,5'-diamino BINAP, polyethylene glycol and
terephthaloyl chloride in the presence of pyridine. It was shown that a
ruthenium complex based on the new polymeric ligand was an effective
catalyst for the asym. hydrogenation of prochiral α,β -unsatd.
carboxylic acids in both Et acetate/water two-phase and in methanolic
solvent systems. The activity and/or enantioselectivity in two-phase
systems were observed to be higher than that in Et acetate or methanol-water
homogeneous systems. The replacement of water with ethylene glycol
increased the activity and enantioselectivity. The activity of the new
catalyst was shown to be about 30 times higher in the two-phase
hydrogenation of 2-(6'-methoxy-2'-naphthyl)-acrylic acid than the
Ru(BINAP-4SO₃Na) catalyst without the long hydrophilic polymer chain,
which illustrated the importance of the amphiphilic structure of the
polymeric ligand.

IT 308795-87-1P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
USES (Uses)

(preparation of water-soluble polyethylene glycol-supported BINAP catalyst
for two-phase asym. hydrogenation)

RN 308795-87-1 CAPLUS

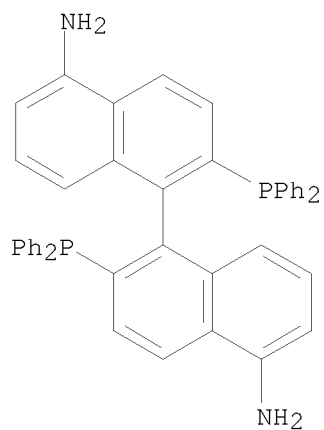
CN 1,4-Benzenedicarbonyl dichloride, polymer with

(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine and
 α -hydro- ω -hydroxypoly(oxy-1,2-ethanediyl) (CA INDEX NAME)

CM 1

CRN 244260-43-3

CMF C44 H34 N2 P2

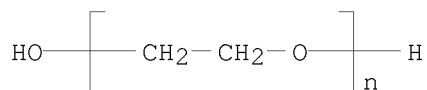


CM 2

CRN 25322-68-3

CMF (C2 H4 O)_n H2 O

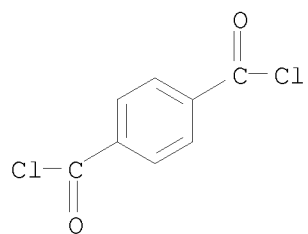
CCI PMS



CM 3

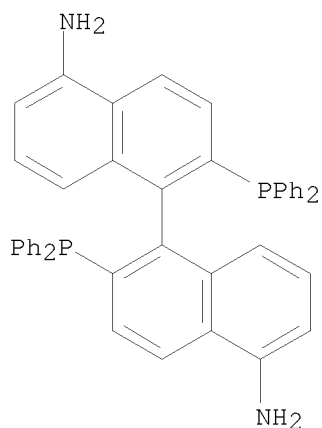
CRN 100-20-9

CMF C8 H4 Cl2 O2



IT 244260-43-3

RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of water-soluble polyethylene glycol-supported BINAP catalyst
for
two-phase asym. hydrogenation)
RN 244260-43-3 CAPLUS
CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
(CA INDEX NAME)



OS.CITING REF COUNT: 50 THERE ARE 50 CAPLUS RECORDS THAT CITE THIS
RECORD (51 CITINGS)
REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 30 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2000:281660 CAPLUS

DOCUMENT NUMBER: 133:135081

TITLE: Highly effective and recyclable dendritic BINAP
ligands for asymmetric hydrogenation

AUTHOR(S): Fan, Qing-Hua; Chen, Yong-Ming; Chen, Xiao-Min; Jiang,
Da-Zhi; Xi, Fu; Chan, Albert S. C.

CORPORATE SOURCE: LMRSS, Cent. Mol. Sci., Inst. Chem., The Chinese
Academy of Sciences, Beijing, 100080, Peop. Rep. China
SOURCE: Chemical Communications (Cambridge) (2000), (9),
789-790

CODEN: CHCOFS; ISSN: 1359-7345

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 133:135081

AB A series of dendritic BINAP ligands have been synthesized by reaction of
(R)-5,5'-diamino-BINAP with 3,5-(PhCH2O)2C6H3CO2H or
3,5-[3,5-(RO)2C6H3CH2O]2C6H3CO2H [R = CH2Ph, 3,5-(PhCH2O)2C6H3CH2] and
their ruthenium complexes used as catalysts in asym. hydrogenation of
4-Me2CHCH2C6H4C(:CH2)CO2H to give (R)-ibuprofen in high ee.

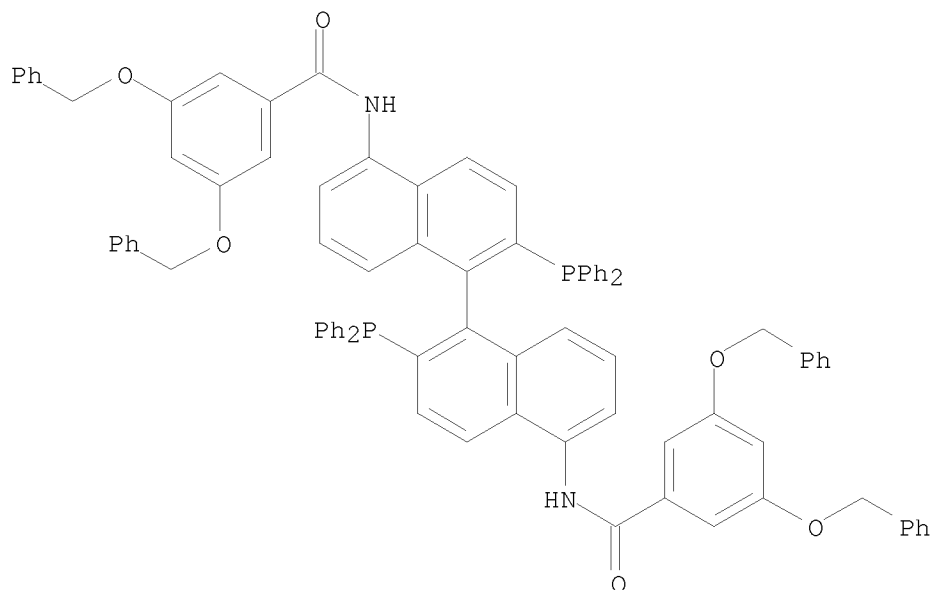
IT 286015-10-9P 286015-11-0P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
USES (Uses)

(highly effective and recyclable dendritic BINAP ligands for asym.
hydrogenation)

RN 286015-10-9 CAPLUS

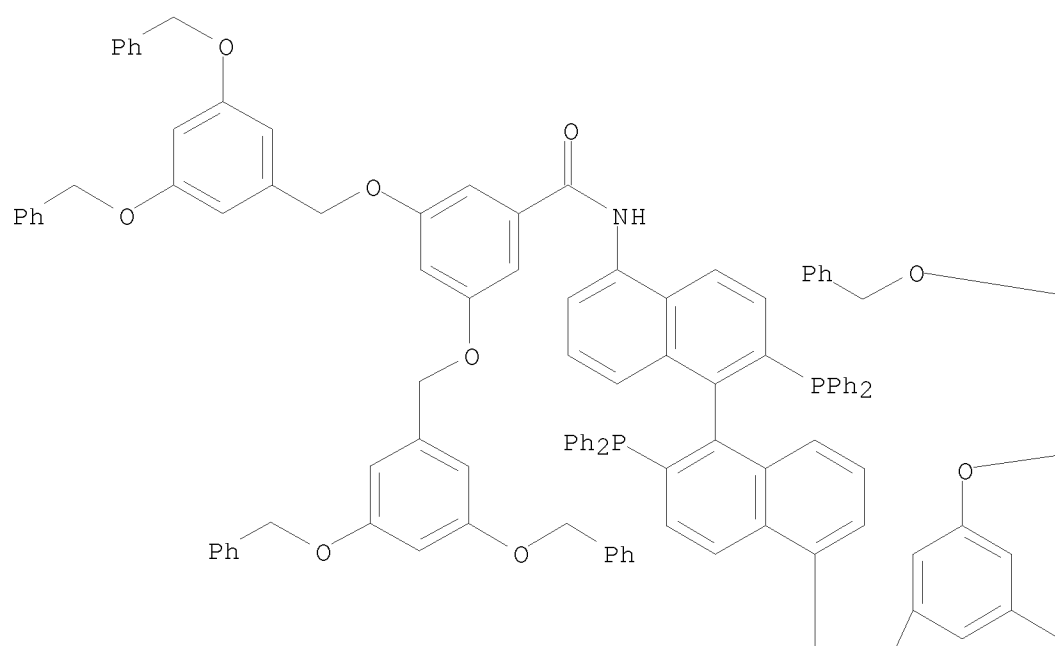
CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis(phenylmethoxy)- (9CI) (CA INDEX NAME)



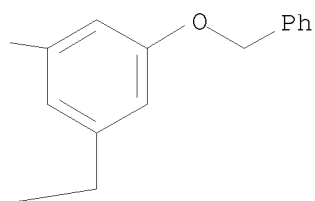
RN 286015-11-0 CAPLUS

CN Benzamide, N,N'-[(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis[3,5-bis[[3,5-bis(phenylmethoxy)phenyl]methoxy]- (9CI) (CA INDEX NAME)

PAGE 1-A

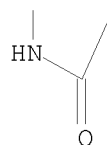


PAGE 1-B

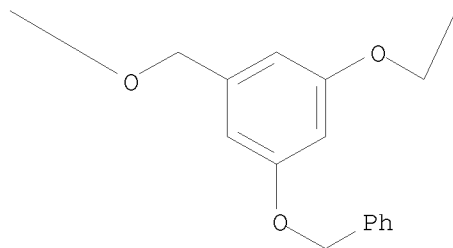


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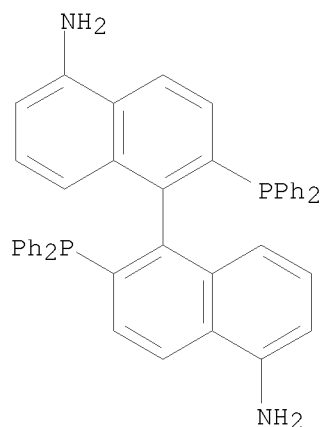
PAGE 2-A



PAGE 2-B



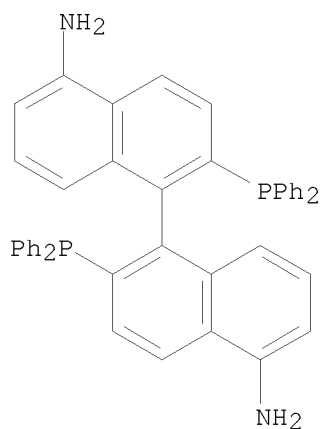
IT 244260-43-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(highly effective and recyclable dendritic BINAP ligands for asym.
hydrogenation)
RN 244260-43-3 CAPLUS
CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
(CA INDEX NAME)



OS.CITING REF COUNT: 120 THERE ARE 120 CAPLUS RECORDS THAT CITE THIS
RECORD (121 CITINGS)
REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 31 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2000:228629 CAPLUS
DOCUMENT NUMBER: 133:4462
TITLE: Catalytic use of chiral phosphine ligands in

asymmetric Pauson-Khand reactions
AUTHOR(S): Hiroi, Kunio; Watanabe, Takashi; Kawagishi, Ryoko;
Abe, Ikuko
CORPORATE SOURCE: Department of Synthetic Organic Chemistry, Tohoku
Pharmaceutical University, Miyagi, 981-8558, Japan
SOURCE: Tetrahedron: Asymmetry (2000), 11(3), 797-808
CODEN: TASYE3; ISSN: 0957-4166
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 133:4462
AB Catalytic asym. Pauson-Khand reactions with chiral bidentate phosphines as
ligands have been successfully accomplished. The catalytic use of
(S)-BINAP as a ligand was demonstrated to be the most effective in the
cobalt-catalyzed reactions of 1,6-enynes, providing a facile entry to
optically active 2-cyclopentenone derivs. with high enantioselectivity. A
plausible mechanism for the asym. induction is proposed on the basis of
the stereochem. outcome obtained.
IT 244260-43-3
RL: CAT (Catalyst use); USES (Uses)
(asym. Pauson-Khand reaction catalyzed in presence of chiral phosphine
ligands)
RN 244260-43-3 CAPLUS
CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
(CA INDEX NAME)



OS.CITING REF COUNT: 60 THERE ARE 60 CAPLUS RECORDS THAT CITE THIS
RECORD (61 CITINGS)
REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 32 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1999:748353 CAPLUS
DOCUMENT NUMBER: 132:12597
TITLE: Soluble polyester-supported chiral phosphines
INVENTOR(S): Chan, Albert Sun-Chi; Fan, Qing-Hua
PATENT ASSIGNEE(S): The Hong Kong Polytechnic University, Hong Kong
SOURCE: U.S., 15 pp.
CODEN: USXXAM

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5990318	A	19991123	US 1998-72590	19980306
PRIORITY APPLN. INFO.:			US 1998-72590	19980306

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 132:12597

AB Novel soluble polyester-supported chiral phosphines have been prepared and have been used in the preparation of rhodium and ruthenium catalysts. Such polymer-supported catalysts show high catalytic activities and enantioselectivities. In the case of Ru(BINAP) catalyst supported on soluble polyester, the resulting catalysts were found to be more active than those of the corresponding homogeneous Ru(BINAP) catalysts in the asym. hydrogenation of 2-arylpropenoic acids. These soluble polyester-supported catalysts can be easily separated from the reaction mixture and then be reused without loss of activity and selectivity. A typical polyester was manufactured by polymerization of 2S,4S-pentanediol 9.76, terephthaloyl chloride 9.95, and (S)-5,5'-diamino-BINAP in C5H5N-1,2-dichloroethane.

IT 244260-44-4P 244260-45-5P 251090-17-2P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(catalyst precursor; soluble polyester-supported chiral phosphines for catalysts for asym. hydrogenation of arylpropenoic acids)

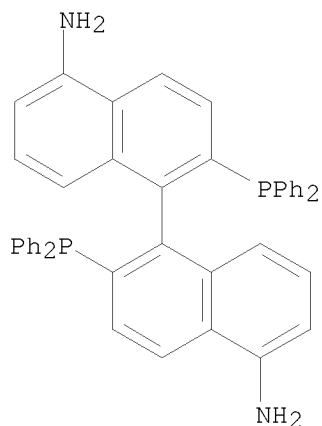
RN 244260-44-4 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with (2S,4S)-2,4-pentanediol and (1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine (9CI)
(CA INDEX NAME)

CM 1

CRN 244260-42-2

CMF C44 H34 N2 P2

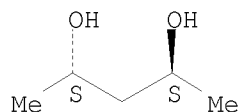


CM 2

CRN 72345-23-4

CMF C5 H12 O2

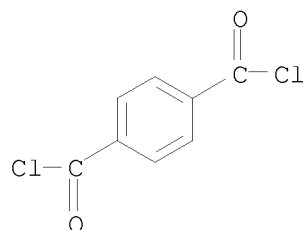
Absolute stereochemistry. Rotation (+).



CM 3

CRN 100-20-9

CMF C8 H4 Cl2 O2



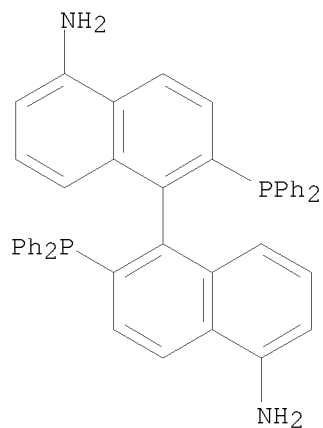
RN 244260-45-5 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with (2S,4S)-2,4-pentanediol and (1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine (9CI)
(CA INDEX NAME)

CM 1

CRN 244260-43-3

CMF C44 H34 N2 P2

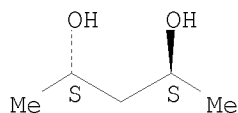


CM 2

CRN 72345-23-4

CMF C5 H12 O2

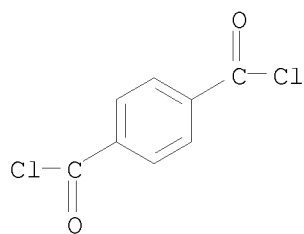
Absolute stereochemistry. Rotation (+).



CM 3

CRN 100-20-9

CMF C8 H4 Cl2 O2



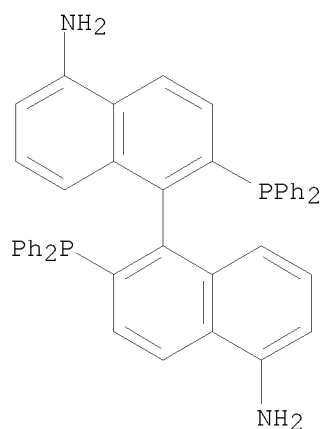
RN 251090-17-2 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with
(1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine and
2,4-pentanediol (9CI) (CA INDEX NAME)

CM 1

CRN 244260-42-2

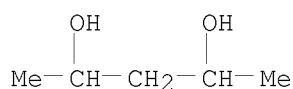
CMF C44 H34 N2 P2



CM 2

CRN 625-69-4

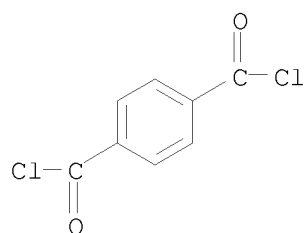
CMF C5 H12 O2



CM 3

CRN 100-20-9

CMF C8 H4 Cl2 O2



IT 244260-44-4DP, ruthenium complexes 244260-45-5DP,
ruthenium complexes
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);
USES (Uses)
(soluble polyester-supported chiral phosphines for catalysts for asym.
hydrogenation of arylpropenoic acids)

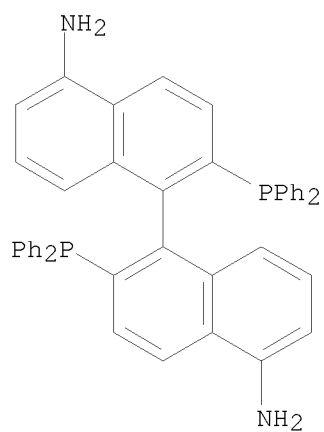
RN 244260-44-4 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with (2S,4S)-2,4-pentanediol and
(1S)-2,2'-bis(diphenylphosphino) [1,1'-binaphthalene]-5,5'-diamine (9CI)
(CA INDEX NAME)

CM 1

CRN 244260-42-2

CMF C44 H34 N2 P2

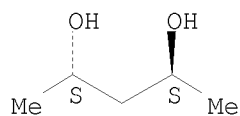


CM 2

CRN 72345-23-4

CMF C5 H12 O2

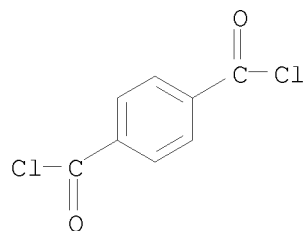
Absolute stereochemistry. Rotation (+).



CM 3

CRN 100-20-9

CMF C8 H4 Cl2 O2



RN 244260-45-5 CAPLUS

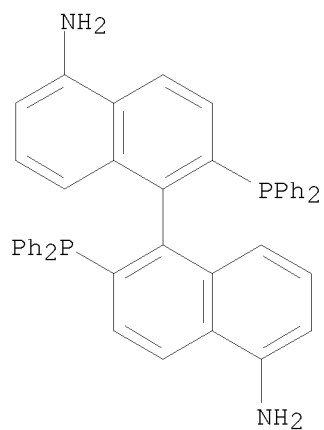
CN 1,4-Benzenedicarbonyl dichloride, polymer with (2S,4S)-2,4-pentanediol and

(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine (9CI)
(CA INDEX NAME)

CM 1

CRN 244260-43-3

CMF C44 H34 N2 P2

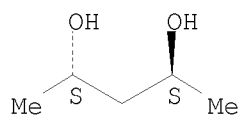


CM 2

CRN 72345-23-4

CMF C5 H12 O2

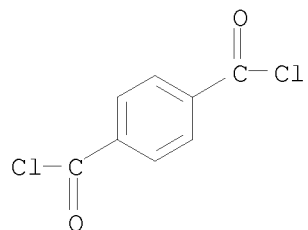
Absolute stereochemistry. Rotation (+).



CM 3

CRN 100-20-9

CMF C8 H4 Cl2 O2



OS.CITING REF COUNT: 9 THERE ARE 9 CAPLUS RECORDS THAT CITE THIS RECORD
(10 CITINGS)
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 33 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1999:474272 CAPLUS

DOCUMENT NUMBER: 131:242777

TITLE: Highly Effective Soluble Polymer-Supported Catalysts
for Asymmetric Hydrogenation

AUTHOR(S): Fan, Qing-hua; Ren, Chang-yu; Yeung, Chi-hung; Hu,
Wen-hao; Chan, Albert S. C.

CORPORATE SOURCE: Union Laboratory of Asymmetric Synthesis and
Department of Applied Biology and Chemical Technology,
The Hong Kong Polytechnic University, Hong Kong

SOURCE: Journal of the American Chemical Society (1999),
121(32), 7407-7408

CODEN: JACSAT; ISSN: 0002-7863

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 131:242777

AB Soluble nonracemic polymer supports are prepared from (2S,4S)-pentanediol,
terephthaloyl chloride, and either (R)- or (S)-5,5'-diamino-BINAP; the
catalysts prepared from the supports and a ruthenium precursor allow asym.
hydrogenation in high yield and conversion and provide higher conversions
and ee than the analogous solution phase ligands. E.g., dehydronaproxen
[2-(6-methoxy-2-naphthyl)-2-propenoic acid] is hydrogenated in the
presence of the (R)- or (S)-BINAP polymeric catalysts and triethylamine in
toluene-methanol to give (R)- or (S)-naproxen, resp., in 93% ee and 100%
conversion. The polymer-bound ruthenium hydrogenation catalysts can be
precipitated from the reaction mixts. by cold methanol and filtered. The
(R)-BINAP catalyst was treated with [Ru(cymene)Cl₂]₂ to prepare a recyclable
hydrogenation catalyst which maintained its enantioselectivity and
conversion through 10 hydrogenation cycles.

IT 244260-45-5P

RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent); USES (Uses)

(preparation of nonracemic soluble, polymeric, and recyclable catalyst
supports
for asym. hydrogenation)

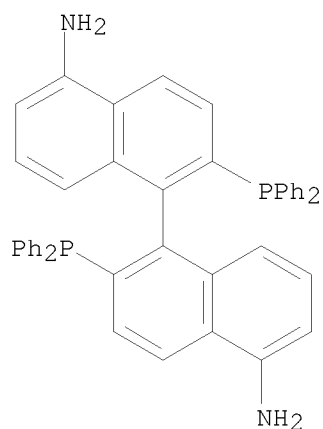
RN 244260-45-5 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with (2S,4S)-2,4-pentanediol and
(1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine (9CI)
(CA INDEX NAME)

CM 1

CRN 244260-43-3

CMF C44 H34 N2 P2

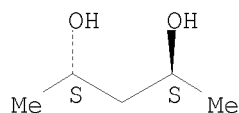


CM 2

CRN 72345-23-4

CMF C5 H12 O2

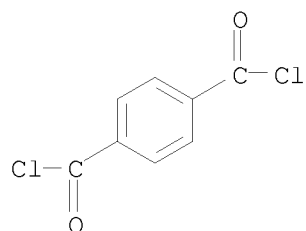
Absolute stereochemistry. Rotation (+).



CM 3

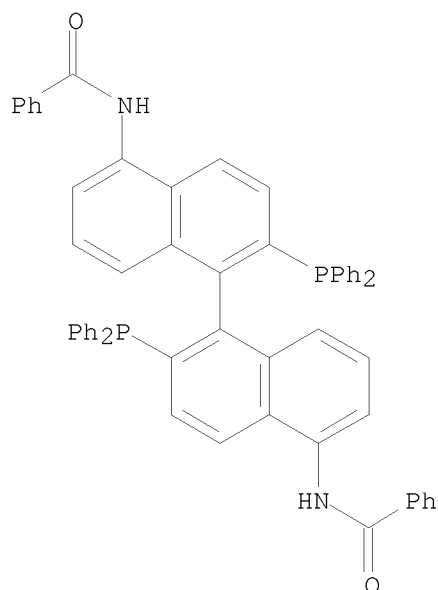
CRN 100-20-9

CMF C8 H4 Cl2 O2



IT 244260-30-8P 244260-44-4P 244260-45-5DP,
 ruthenium complex with
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
 USES (Uses)
 (preparation of nonracemic soluble, polymeric, and recyclable catalyst
 supports
 for asym. hydrogenation)
 RN 244260-30-8 CAPLUS

CN Benzamide, N,N'-[(1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]bis- (9CI) (CA INDEX NAME)



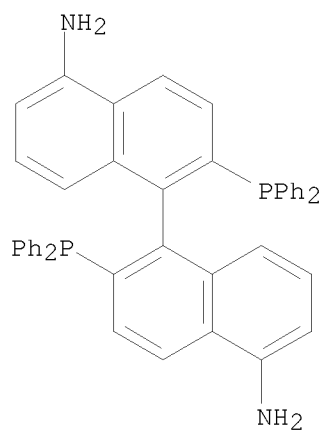
RN 244260-44-4 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with (2S,4S)-2,4-pentanediol and (1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine (9CI) (CA INDEX NAME)

CM 1

CRN 244260-42-2

CMF C44 H34 N2 P2

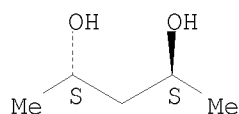


CM 2

CRN 72345-23-4

CMF C5 H12 O2

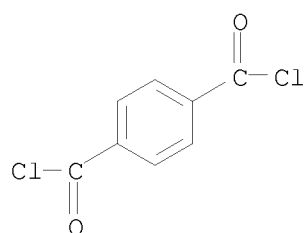
Absolute stereochemistry. Rotation (+).



CM 3

CRN 100-20-9

CMF C8 H4 Cl2 O2



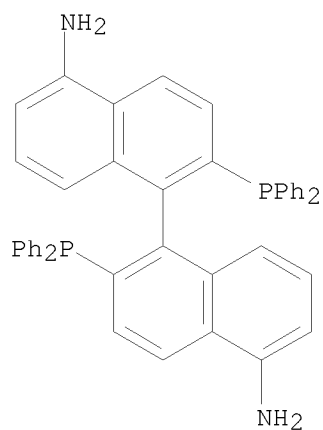
RN 244260-45-5 CAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with (2S,4S)-2,4-pentanediol and (1R)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diamine (9CI)
(CA INDEX NAME)

CM 1

CRN 244260-43-3

CMF C44 H34 N2 P2

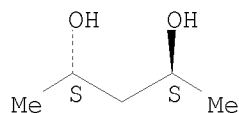


CM 2

CRN 72345-23-4

CMF C5 H12 O2

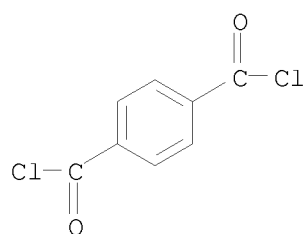
Absolute stereochemistry. Rotation (+).



CM 3

CRN 100-20-9

CMF C8 H4 Cl2 O2



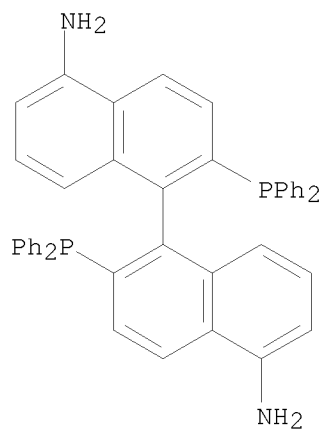
IT 244260-42-2 244260-43-3

RL: RCT (Reactant); RACT (Reactant or reagent)

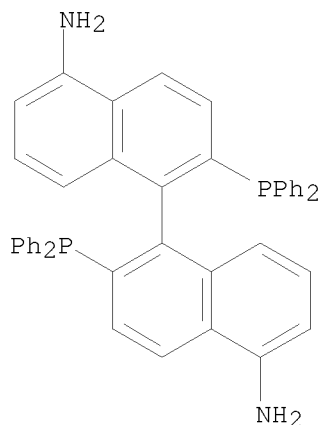
(preparation of nonracemic soluble, polymeric, and recyclable catalyst supports

for asym. hydrogenation)

RN 244260-42-2 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1S)-
(CA INDEX NAME)

RN 244260-43-3 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (1R)-
(CA INDEX NAME)

OS.CITING REF COUNT: 99 THERE ARE 99 CAPLUS RECORDS THAT CITE THIS
RECORD (99 CITINGS)
REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 34 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1993:581016 CAPLUS

DOCUMENT NUMBER: 119:181016

ORIGINAL REFERENCE NO.: 119:32371a,32374a

TITLE: Preparation of water-soluble alkali metal
sulfonate-substituted binaphthylphosphine transition
metal complexes and enantioselective hydrogenation
method using them

INVENTOR(S): Ishizaki, Takerou; Kumobayashi, Hidenori

PATENT ASSIGNEE(S): Takasago International Corp., Japan

SOURCE: Eur. Pat. Appl., 9 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

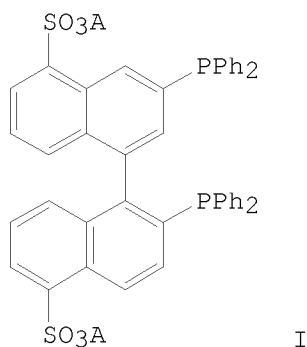
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
EP 544455	A1	19930602	EP 1992-310561	19921119
EP 544455	B1	19970212		
R: CH, DE, FR, GB, IT, LI				
JP 05170780	A	19930709	JP 1991-331535	19911121
JP 2736947	B2	19980408		
US 5274146	A	19931228	US 1992-977638	19921117
US 5324861	A	19940628	US 1993-116583	19930907
PRIORITY APPLN. INFO.:			JP 1991-331535	A 19911121
			US 1992-977638	A3 19921117

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): CASREACT 119:181016; MARPAT 119:181016
GI



I

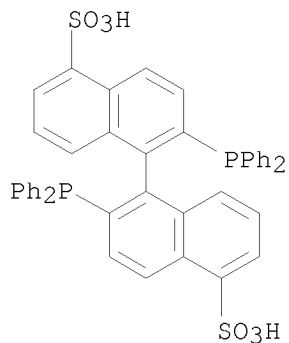
AB [M(X)_n(Q)(SO₃A-BINAP)]Y (M = Ru, Ir, Rh, Pd, etc.; SO₃A-BINAP = tertiary phosphine represented by formula I (A = alkali metal atom), X = Cl, Br, iodo; n = 0, 1; Q = benzene or p-cymene, Y = Cl, Br, iodo, ClO₄, PF₆, BF₄) were prepared and shown to be catalysts for the enantioselective hydrogenation of olefins, ketones, and imines.

IT 150271-78-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reactions of, with ruthenium and iridium complexes, enantioselective hydrogenation catalyst from)

RN 150271-78-6 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-disulfonic acid, 2,2'-bis(diphenylphosphino)-, disodium salt, (R)- (9CI) (CA INDEX NAME)



● 2 Na

OS.CITING REF COUNT: 19 THERE ARE 19 CAPLUS RECORDS THAT CITE THIS RECORD (22 CITINGS)

L3 ANSWER 35 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1988:204837 CAPLUS

DOCUMENT NUMBER: 108:204837

ORIGINAL REFERENCE NO.: 108:33665a,33668a

TITLE: Preparation of chiral phosphine compounds

INVENTOR(S): Okano, Tamon; Shimano, Yasunobu; Konishi, Hisatoshi;
Kiji, Jitsuo; Fukuyama, Keiichi; Kumobayashi,
Hidenori; Akutagawa, Susumu

PATENT ASSIGNEE(S): Takasago Perfumery Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

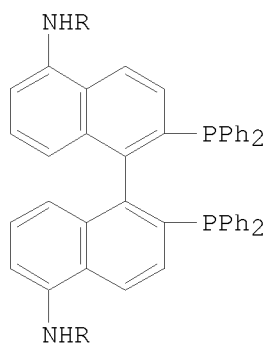
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

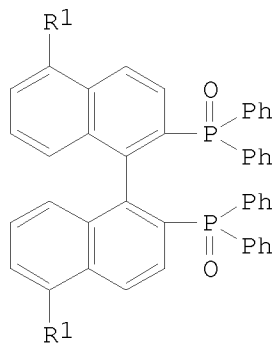
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	-----
JP 62178594	A	19870805	JP 1986-19203	19860201
JP 05011117	B	19930212		
EP 235450	A1	19870909	EP 1986-309141	19861121
R: CH, DE, FR, GB, LI, NL				
US 4705895	A	19871110	US 1986-937805	19861121
PRIORITY APPLN. INFO.:			JP 1986-19203	A 19860201

GI



I



II

AB Phosphine derivs. (I; R = H, Ac), useful in asym. synthesis, are prepared
 Nitration of oxide (+)-II (R¹ = H) in Ac₂O gave 98.6% dinitro derivative
 (+)-II (R¹ = NO₂), which was reduced over SnCl₂ in EtOH-HCl to give 85.3%
 diamine derivative (+)-II (R¹ = NH₂) (III). Reduction of III in MePh over
 SiHCl₃

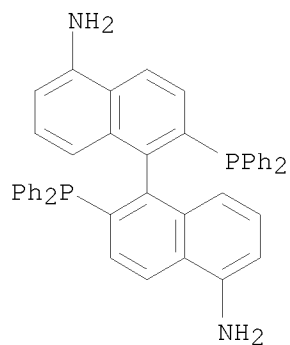
and Pr₃N gave 70.5% phosphine (+)-I (R = H) (IV), which was refluxed with
 Ac₂O and Pr₃N under N to give 76.0% diamide (+)-I (R = Ac). Asym.
 isomerization of Me₂C:CHCH₂CH₂CMe:CHCH₂NEt₂ in the presence of
 Rh-IV-norbornadiene ClO₄- catalyst gave Me₂C:CHCH₂CH₂CHMeCH:CHNEt₂ with
 39.6% conversion.

IT 114317-10-1P

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation and complexation of, with rhodium norbornadiene perchlorate)

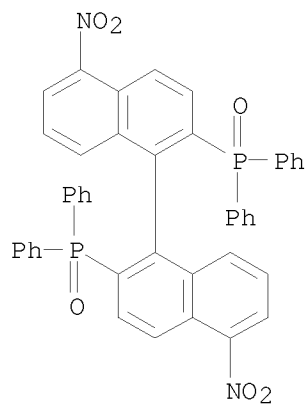
RN 114317-10-1 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphino)-, (+)-
(9CI) (CA INDEX NAME)

IT 114317-08-7P 114317-09-8P

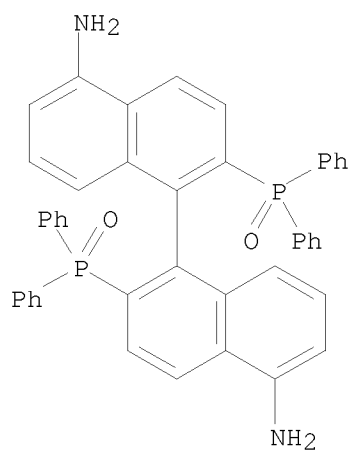
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(preparation and reduction of)

RN 114317-08-7 CAPLUS

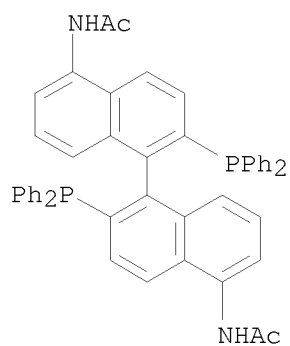
CN Phosphine oxide, (5,5'-dinitro[1,1'-binaphthalene]-2,2'-diyl)bis[diphenyl-
, (+)- (9CI) (CA INDEX NAME)

RN 114317-09-8 CAPLUS

CN [1,1'-Binaphthalene]-5,5'-diamine, 2,2'-bis(diphenylphosphinyl)- (CA
INDEX NAME)



IT 114317-11-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 114317-11-2 CAPLUS
CN Acetamide, N,N'-[2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-
diyl]bis-, (+)- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 27 THERE ARE 27 CAPLUS RECORDS THAT CITE THIS
RECORD (28 CITINGS)

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---Logging off of STN---

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Executing the logoff script...

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10539640

01/15/2010

STN: SEARCH

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	207.35	399.60
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-29.75	-29.75

STN INTERNATIONAL LOGOFF AT 20:03:47 ON 15 JAN 2010